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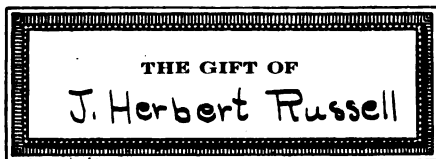
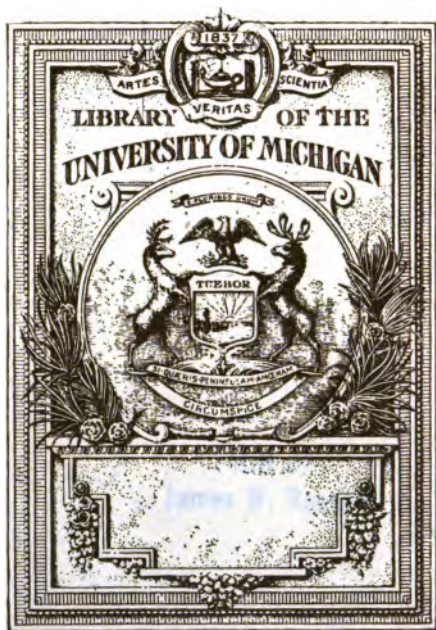
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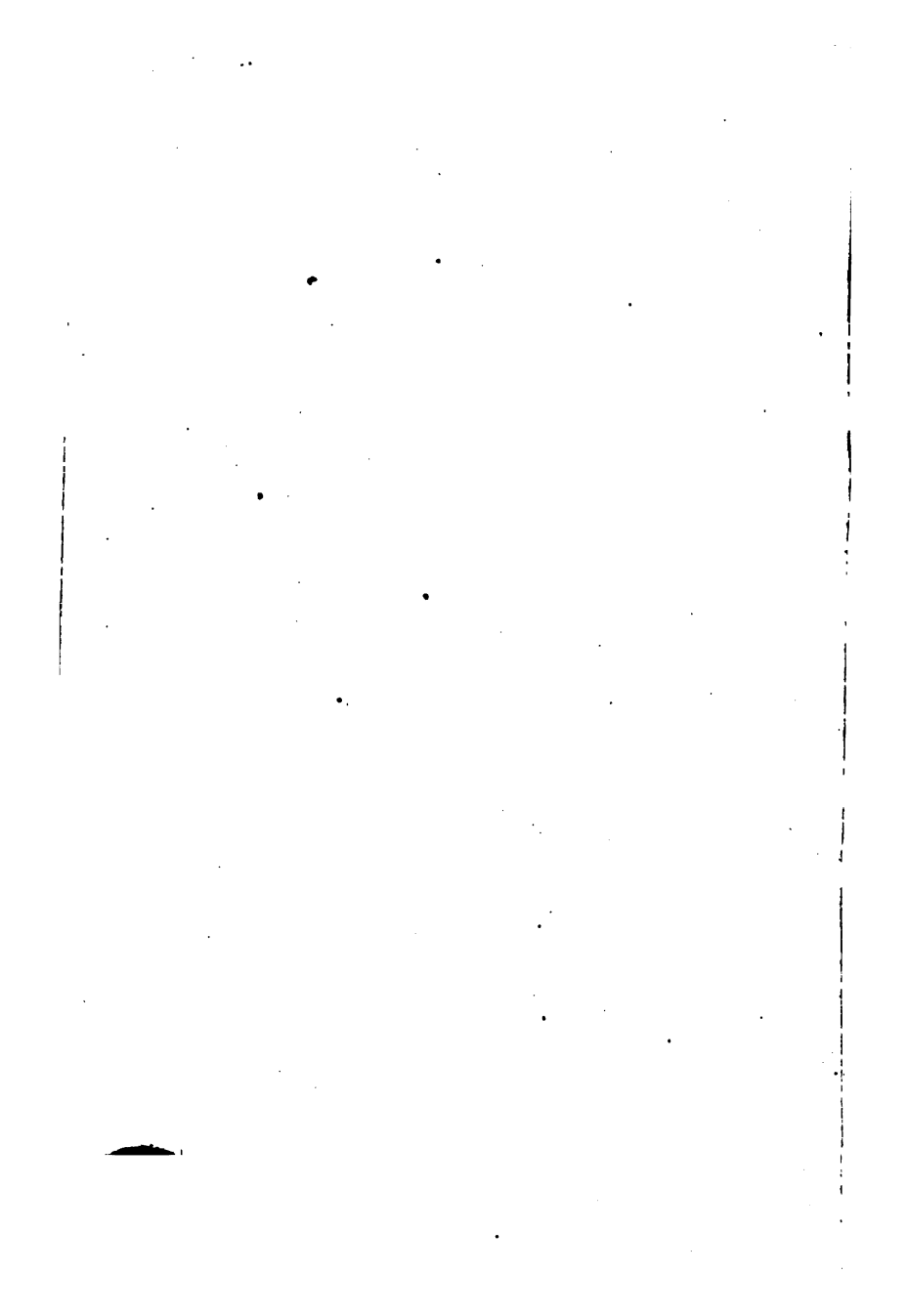
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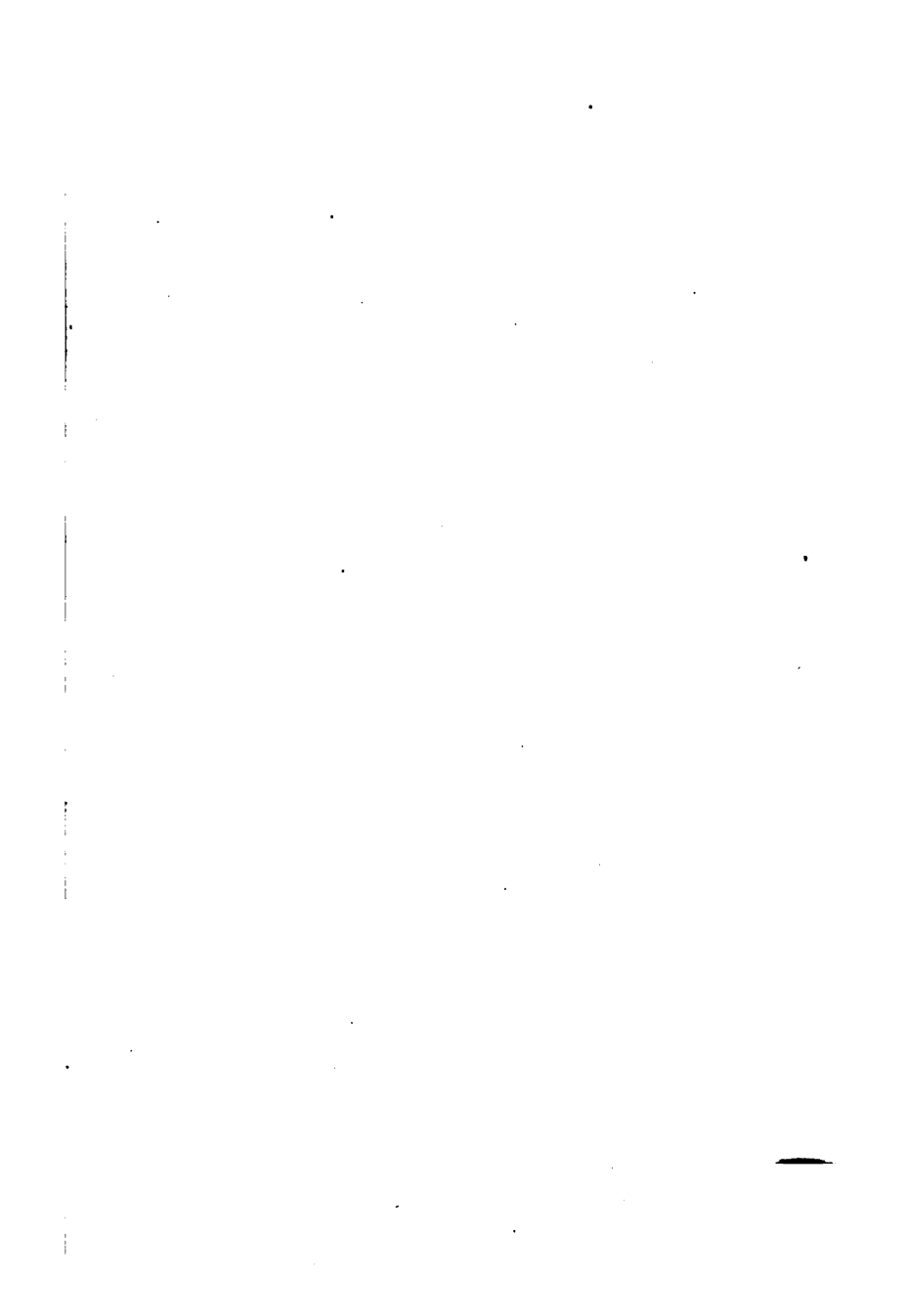
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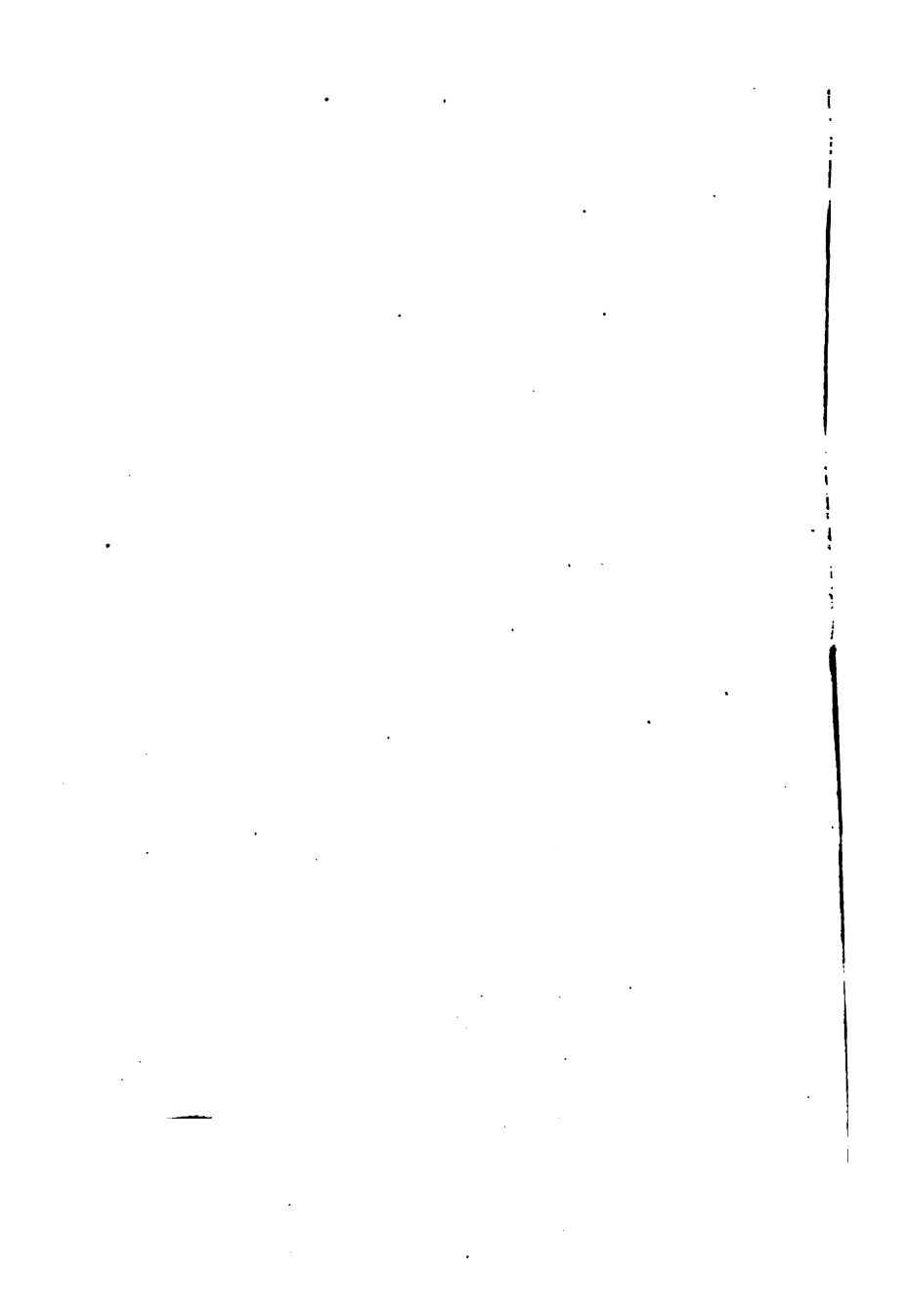
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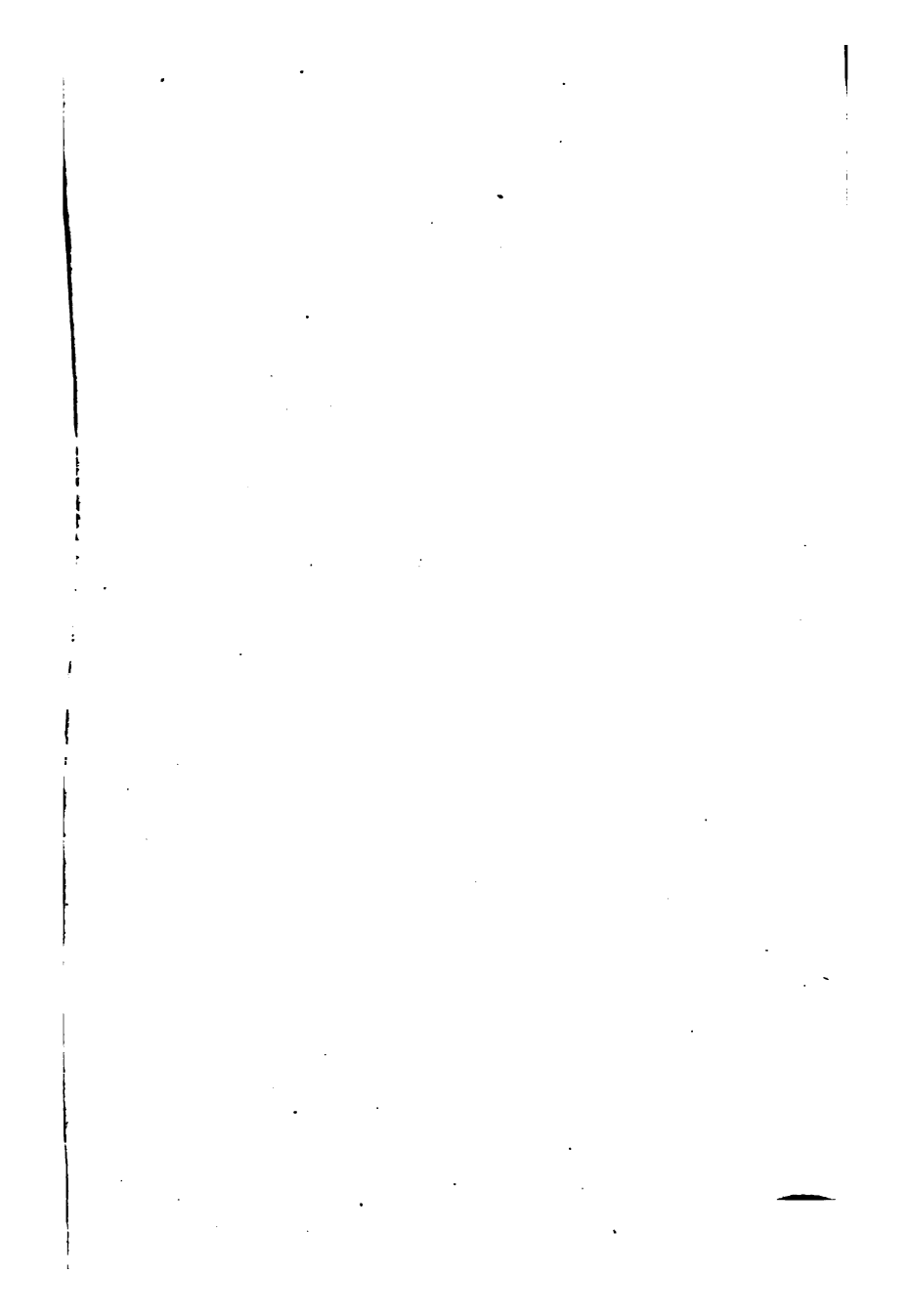


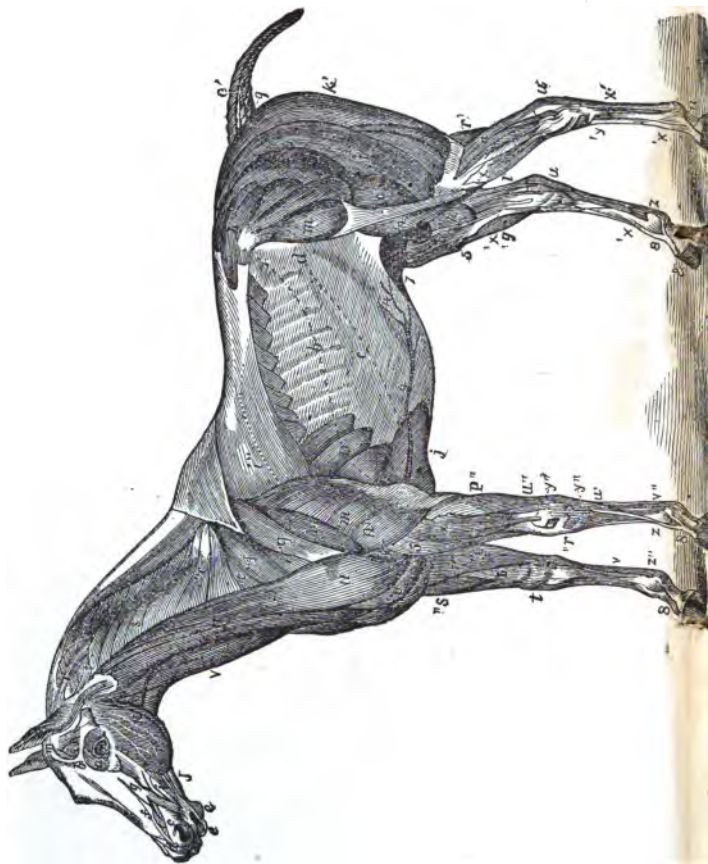
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A Tabular Synopsis

8. Extensor tendons, Fore and outer parts of the arm, To extend the lower extremity of the limb.

g. Flexor pedis,
Transversalis abdominis internus,
D. Serratus magnus,

Singular to, "ulnaris."
The same as the above,

Between the shoulder and lateral parts of the chest,

J. Pectoralis magnus,

In the lower part and side of the thorax,

4. Superficial thoracic vein,

The large vein of the chest and abdomen,

e'. Erector coccygis,

In the upper and side parts of the tail,

9. Compressor coccygis,

At the side of the root of the tail,

h". 4. The three glutei,

Middle and external parts of the haunch,

J. Triceps,

The anterior part and sides of the haunch,

k'. k. Biceps abductor tibialis,

At the back and side of the haunch and thigh,

5. Tibia,

The bone between the stifle and hock-joint,

m. Tensor vaginae,

Anterio-external part of the haunch,

n'. Rectus,

Anterior part of the haunch between the ilium and patella,

O'. Vastus externus,

Same as above,

r. Gastrocnemius internus,

At the posterior part of the leg,

u. u. v. Gastrocnemii,

Same as above,

y. Peroneus,

On the front and outer part of the limb,

y. z. z. 8. Extensor tendons, Fore and outer part of the arm, To extend the lower extremity of the limb,

"Bastion of, the bowels, and aid in the evacuation of, the bowels."

It forms the principal agent of support to the ribs and shoulder, and is more or less concerned in all the motions of the chest and shoulder.

To draw the head of the humerus, and along with it the lower end of the scapula, backward, throwing the latter more into an upright position.

To erect the tail.

To depress the tail.

The glutei act as propellers of the body; they are in powerful action when the horse is kicking or rearing.

To extend and advance the thigh.

To abduct the limb.

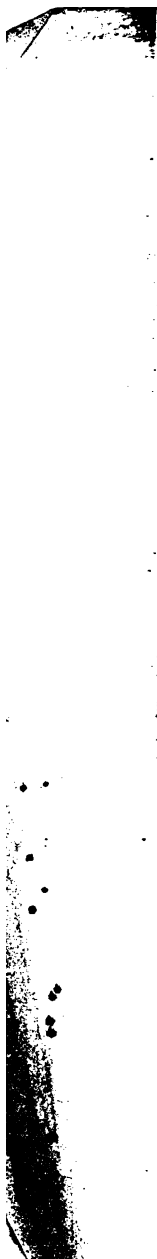
To render tense the fascia lata, extend the thigh.

To support the patella and aid in raising the limb.

It assists the femur and flexes the pastern.

To extend the pastern and foot.

To extend the lower extremity of the limb,



ILLUSTRATED

Horse-Owners' Guide;

BEING A SYNOPSIS OF THE

DISEASES OF HORSES AND CATTLE,

Their Causes, Symptoms, and Treatment.

ESPECIALLY ADAPTED TO THE USE OF

FARMERS AND HORSEMEN.

BY

GEO.² O. HARLAN, V.S.

TOLEDO, OHIO :

B. F. WADE & CO., PRINTERS AND BINDERS.
1878.

J. Herbert Russell
5-15-1923

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Persons wishing a copy of this work can get it by re-mitting Two Dollars to the author.

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Books will be sent, post-paid by mail, on receipt of price.

Whatever is properly sent to my home and principal office, will be forwarded and sure to reach me if addressed,

DR. GEO. O. HARLAN,
Fremont, Sandusky Co., O.

Entered, according to Act of Congress, in the year 1876, by
GEORGE O. HARLAN, V.S.
In the Office of the Librarian of Congress, at Washington.

PREFACE.

Experts and professional horsemen, who may refer to these pages, will not be long in discovering that I have not attempted to write for them; and some may even differ with me on some points; but I have little fear that any two will find the same fault, so notional and self-opinionated are they on the subject of the diseases and management of the horse.

This is the tenth edition of my work. While disposing of the nine former editions (25,000 copies in all) I have learned from observation, and in my practice and extensive travels, that horsemen and farmers want a simple and practical work. I have written for the vast multitude of *horse-owners* who have little or no exact information on this subject, and whose enquiring minds would only be confused and bewildered by the technical terms and elaborate disquisitions. For this multitude the information furnished must necessarily be condensed and superficial, but should be of such a nature as would lead them in the right direction, so that all their future experience may be built upon a good foundation of common sense, unhampered by crude notions and antiquated prejudices. The world has outgrown much that was counted for wisdom a few generations ago, and the old "*horse books*," viewed in the light of present veterinary

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knowledge are but stupid collections of old fashioned nonsense. To make this edition the more valuable, it has been carefully revised, much valuable matter has been added, and the number of illustrations largely increased, involving considerable additional expense. It is much larger and more complete than any previous edition.

It is the author's hope that every reader will find some useful information on some of those points about which everyone possessing animals should be informed.

GEO. O. HARLAN,

Veterinary Surgeon.

TO MY PATRONS.

In the arrangement of this book all superfluous or worthless matter has been carefully excluded, to avoid making the book large and costly, in order to make the price so moderate as to place it within the reach of all.

The remedies are all simple, and are classified for convenience of reference, and in the treatment of the various diseases are spoken of as for example, *Cough Powders* for all throat and lung diseases; *Tonic Powders* for all cases of debility, loss of appetite, etc.; *Sweating Liniment* for all deep-seated and chronic injuries, such as ringbone, bone spavin, curb and diseases of the feet, etc.

To find the formulas or recipes for any of the compounds mentioned in the treatment of diseases, turn to the formulas or recipes in the body of the book. The object of this arrangement was to economize space by avoiding unnecessary repetition.

Persons at a distance having sick or lame animals can consult me by letter, giving symptoms as accurately as possible, enclosing fifty cents for advice. No attention will be paid to letters asking for advice without the above fee enclosed. Write name, post-office, county, and State plainly, and address:

GEO. O. HARLAN,

Fremont, Sandusky Co., O. Veterinary Surgeon.

The Improved System

OF

BREAKING AND HANDLING HORSES.

In the management and handling of the horse, we need say little. A man that cannot control himself, cannot control the horse. All bad horses are made so by bad treatment. "Balky drivers make balky horses." The theory of training horses was first introduced in the United States in 1837, by O. H. P. Fancher. Since then many others have come before the public as Horse-trainers, claiming secrets in the art, by which all men that learn the secret can become Horse-trainers. The only secret is good sound sense and kindness. Without it none will succeed.

We have only added in this work that which we think will be the most useful to the horse owners. The manner of breaking horses of bad habits will be found in a plain, practical method, with illustrations. There are many bad habits of the horse which we have not mentioned in this work, but a sensible application

of the rules we have laid down, will find a remedy for most, if not all of them.

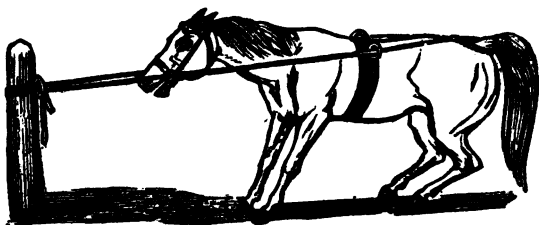
THE WAR BRIDLE.

This is one of the most useful appliances for the handling of a colt or unruly horse, that has ever yet been invented. Get a small, half-inch rope, twenty feet long, with about an eight inch loop that will not slip at one end ; put the loop in the mouth, pass the cord around the neck close to the ears, and bring it through the loop that is around the under jaw. Now if you wish to learn the colt to lead, stand in front of the colt, and give the word, "come here !" with a light quick jerk upon the rope ; the animal will, in a short time, learn what the word means ; when he comes to you give him a piece of apple, pat him kindly. By persevering in this way, we will soon have the horse learned to come at the word. To learn the horse to stop and back, use the same cord. In teaching the colt words, always accompany the word with an explanatory act—something that will call his attention to the connection between the word and the act ; for instance in saying "Whoa !" always pull upon the cord or reins. Never use words either in or out of the barn, except for a purpose.

HALTER PULLING.

Place on the horse a common head-stall, or halter. Put on a common girth. Take a half-inch rope about twenty feet long ; pass the center of this rope under the tail in place of a crouper ; twist the rope over a few times, pass the ends of the rope under the

girth, bringing an end upon each side of the neck, and pass the ends through the rings of the halter or bridle, close to the nose, and tie to a stout ring or post, leaving about three feet play of rope. As soon as the horse pulls back, the pressure coming upon the tail, (see illustration), instead of the head, where he expects it, he starts up, it being natural to go from the injury. If he is in the habit of pulling nights, this arrangement may be kept on without fear of the



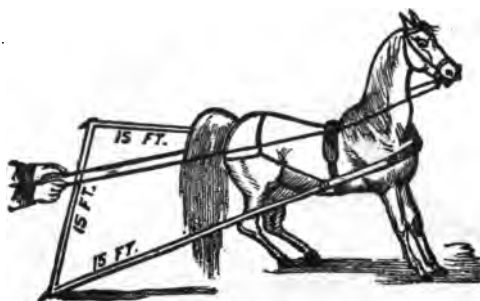
HALTER PULLING.

horse getting tangled in the rope. The same method can be used while hitched in harness on the street. Common sense will show you that, as there is no pull upon the head, and consequently no injury there, he will soon cease pulling and lose the habit. To make the lesson effective, you may cause him to pull by using such exciting means as are apt to alarm him.

WHEELING AROUND IN HARNESS.

Put a horse with this habit in the "Safety Shafts" (see illustration). Now put on the "war bridle" and give him a few pulls; then have some object which causes alarm, such as an umbrella, hat, etc., brought

up in front of him. Hold well on to the "bridle," and let him examine the article. The shafts will keep him from backing or wheeling and the "bridle must keep him from going ahead. Then drive him up to these objects by the reins, teaching him not to fear them, and that going ahead is the only direction for him. These shafts will be found useful in many



SAFETY SHAFTS.

other particulars, which will readily suggest themselves. There are of course, many other evil habits of the horse, but a sensible application of the rules we have laid down will find a remedy for most, if not all of them.

LOLLING THE TONGUE.

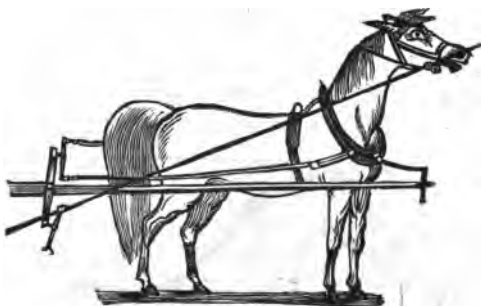
To prevent this, examine whether the tongue is put out over the top of the bit or underneath the bit. if found on top of the bit the only remedy is to keep the tongue underneath the bit. This can be done by using a straight bit. Take a thick piece of sole-leather, about four inches long and two inches wide ; cut

off the ends rounding ; punch two small holes about half an inch from the edge on each side near the center ; with a leather string tie on top of the bit. The leather then should be dipped in melted rosin, so as to prevent the saliva of the mouth from having any effect upon the leather. When you put on the bit, place the bit on the top of the tongue, take the side-pieces of the head-stall up pretty well. This will prevent him from running his tongue out over the bit. If the horse runs his tongue out under the bit then the tongue must be kept on top of the bit. Take a straight bit, drill two holes through it two inches apart, in the front side of the bit. Get a piece of No. 10 wire about six inches long, bent half round, and rivet the ends in the holes drilled through the bit ; then form it in the shape of the bowl of a spoon. When you put on the bit pull the tongue through between the wire and the bit, seeing that the space is large enough for it to sit easy. This plan will soon break up this bad-looking habit, if properly applied.

BALKING.

Balky drivers often make balky horses. Put the war bridle on ; bring the part over the neck close to the ears ; now jerk sideways and ahead and finally ahead, until there is prompt obedience in coming ahead when pulled upon. Hitch to a wagon by the side of a true horse. Have prepared a smooth, stiff pole, about the length of the wagon tongue. Bore a hole about four inches from one end, pass the end of the rope or war bridle through the hole, and

tie the pole close to the side of the horse's mouth. The other end of the pole must be bored opposite the whiffletree, and tied firmly with a piece of cord. Now tie a strap or cord from the inside hame ring of the true horse to the inside hame ring of the balky horse, for the pole to rest upon, so as to be just taut when the horses are in position. (See illustration.)



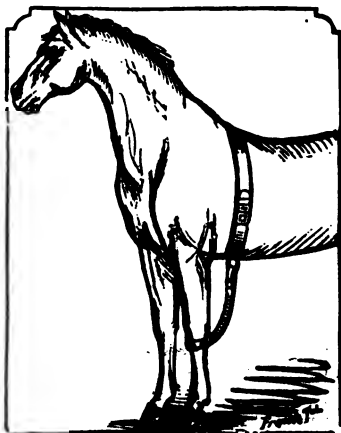
ANTI-BALKING.

As soon as the balky horse refuses to go, the strength of the true horse is brought, by the pole, on the head, which will compel him to go forward. Start and stop often, until obedience is secured. This pole may be used as long as there is any disposition to balk. The horse should not be required at first to use the strength in drawing. Let this be required gradually, as there is obedience and willingness. There are but few horses that cannot be broke by this method. Yet there are some horses that this method has failed. Fortunately, we have a remedy that will conquer the worst cases. Take a half inch cord fifteen feet long,

tie one end to the outside hame ring of the balky horse, take it back under the tail the same as halter pulling, and tie the other end to the inside hame ring of the true horse. Remember this appliance should only be applied if the pole fails. The pole must be left on when the cord is applied. Both remedies will not fail to make the worst horse work.

JUMPING OVER FENCES.

Many farmers assert that a remedy to prevent a horse from jumping is alone worth the price of this book. This method has never failed, and we can rec-



ANTI-JUMPER.

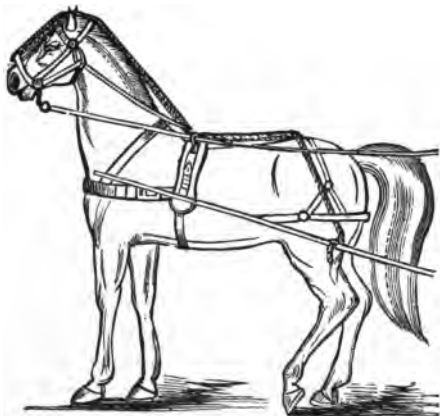
ommend it to all who have that kind of horses or mules. It is also a great benefit when a horse is turned out that will run, and often injure themselves. Place

a good stout girth around the horse, having a ring sewed or tied on just back of the elbow on the left side. Now get a piece of soft leather three inches wide and about eight inches long; cut it to fit snug around the leg just below the knee; then take a small strap one and a half inches wide, long enough to buckle around over the piece of leather just below the knee. By cutting slits in the center of the leather the strap can be drawn through, and when buckled tight it will remain in its place. A strap must then be passed through the ring in the girth, and through a ring in the small strap just below the knee. A little slack should be left, so as to let the animal step forward. (See illustration.) You will see that it is impossible for the animal to jump with the leg that has the strap attached, as a horse must always raise with both legs to jump a fence. This method gives the head perfect liberty, and there is no danger of bruising the limbs, as is often done with a yoke.

KICKING IN HARNESS.

This is apparently the most dangerous and difficult habit to overcome to which horses are subject; yet it is a habit that yields readily to my treatment, but requires care and a large share of common sense in determining how much must be done, and where to stop. This cannot be learned by any fixed rule, since there is such a great difference of extremes shown in this habit that it is not safe to venture a limit of what and how much must be done. If the horse will not permit the harness to be put on, use

the war bridle, place the rope well back on the neck, draw it tight and tie a half-hitch, step back and pass the hand from the shoulders to the hind parts gently ; if this is done, take the harness in the right hand and



ANTI-KICKER.

work it back gently over the back ; in a few minutes slack up on the cord, caress the animal a short time, then draw the cord up again, and proceed until the harness is properly fitted. A sulky is best to drive the horse in first. Now we use a short rope, long enough to go around the upper jaw, which must be tied so as not to slip, the knot must be placed in the center of the mouth. Then take a cord twenty feet long, half inch thick, double it, and pass one end through the loop around the upper jaw pass up between the ears (having a ring or loop fastened to the top of the bridle for the ropes

to pass through); pass each rope through the terrets of the back-band of the harness, where the lines pass through, then through a ring that must be tied to the crouper strap, divide the cords, and tie each end snugly to the shafts (see illustration). By this arrangement a horse cannot kick unless he jerkes his head up, he will punish himself at every attempt he makes to kick. Avoid using the whip. Treat the horse kindly, even with marked proofs of affection.

To Observe Diseases.

We are sometimes asked how it is that we know so exactly what the disease that this or that animal is affected with, as it can not speak and narrate its ills and its aches. To this question we might repeat a common truism. "A shut mouth tells no lies !" therefore nobody is deceived. Nature has but one set of weights and measures, and they only should be used. Thus, if a horse has a corn or bruised heel, he will be as sure to go lame as he would with an ordinary sprain ; the only difference is that he not only stretches out the sore foot, but he elevates the heel from the ground, and will not set his foot flat to please, or it may be said to deceive any one. In the diseases of the chest, lungs or plural, the animal can not lie down, whereas, in diseases of the abdomen, stomach, large or small intestines, when the pain is very great, they will lie down and roll. In diseases of the bladder the symptoms are well marked by the frequent efforts to urinate, and often lie down, but seldom roll ; and in all cases where there is pain in any part of the body

which the animal can reach he will show by pointing with his nose.

We have still other and more important symptoms, the pulse and the membrane of the nose. These are the important keys to all internal diseases. Study them well while the animal is in health, and you will soon become familiar with them, so as to enable you to detect when there is anything wrong with the animal.

If the horse is sick use reason. Don't bleed, and pour down the poor animal such medicines as every ignorant bystander may recommend. The belief is too prevalent that every ailment is based upon botts or colic, and that if medicine will not cure, it will not harm. This is all wrong. If you do not know what the trouble is, do not commit the error of doing anything more than put the animal in a quiet, clean and well ventilated stall. If cold weather blanket warmly and nurse well until you can get symptoms, so as to tell what the disease is. If the animal becomes suddenly lame in the hind limb, examine the foot, raise the foot up, and work the limb back and forward. If the injury is above the hock joint there will be symptoms of pain in raising and moving the limb. If the injury is in the hock joint the lameness will be very great on turning the animal on the affected limb. If in the foot there will be fever in the foot.

The same examination should be made of the front limb. If there is an injury in the shoulder there

will be pain on raising the leg; on moving the animal, the toe will drag upon the ground. If the injury be in the knee there will be swelling, and the animal will not bend the knee. If in the foot a careful examination is required.

In all cases find, if possible the cause. The first attempt toward the treatment, will be to remove the cause, and in many cases simply by removing the cause, nature will accomplish a cure. No treatment will be of any benefit while the cause yet remains.

Horse Owner's Guide.

THE PULSE.

The pulse of the horse or ox is felt on the inner angle of the lower jaw, as being the most convenient place. The state of the pulse tells the condition of the heart, whether the disease is of an exalted or depressed character, or whether sickness is at all present. The pulse is more frequent in the young than in old animals. In the full-grown and healthy horse it beats from thirty-two to thirty-eight in the minute. In inflammation and fever the frequency of the pulse is increased. In debility and depression it is slower, but sometimes quicker than natural. The pulse of inflammation and fever numbers from seventy-five to eighty in the minute. Hence, in all cases when the pulse is above the natural standard the fever medicine should be given. If no other symptoms are observed, no other remedy need be administered. In cases where the pulse is low and feeble, the stimulants and tonics should be administered; such as Carbonate of Ammonia, from two drachms to half

ounces, which should be mixed in cold gruel and given three times a day. Ammonia is a highly valuable medicine when given in weakness, debility, and prostration; indeed, Ammonia and its several preparations need only to be used, to convince one of their utility, in supporting the vital powers, and thereby curing disease.

THE MEMBRANE OF THE NOSE.

The membrane of the nose is an excellent guide to the degree and character of any disease. In health, and uninfluenced by exercise, that portion of the membrane seen in the nostrils is a pale uniform pink. An increased blush of red betokens some excitement in the system; a streaked appearance, inflammation commenced; intense redness, acute inflammation; pale ground with patches of vivid red, half subdued, but still existing fever; uniform color, but somewhat redder than natural, a return to healthy circulation; paleness approaching whiteness, debility; and dark livid color, approaching stagnation of the vital current.

EXPLANATION AND TREATMENT OF THE FOOT, SHOEING, &c.

Perhaps no greater curse has ever been inflicted upon the horse than that of shoeing. His feet are injured—often ruined—by it. Moreover, it frequently causes diseases which ruin not only the foot, but other and more vital parts. Horses, if used at all on our present roads, must be shod. All that we hope to do,

in writing on this subject, is to prevent, as far as possible, the unnecessary infliction of these evils upon the horse, by pointing out wherein they exist, and recommending a better practice than is usual in the art of shoeing.

The subject of horse-shoeing has been discussed for ages, and hundreds have been the inventions for the improvement of the shoe ; yet but little progress has been made, and the subject is scarcely better understood than it was a century ago.

If the reader will examine the colt's foot that has never been shod, it will be found almost round, and the natural bearing being the frog and walls. The frog is considered by all horsemen to be the life of the foot. The old maxim "No frog no foot," is a very true one when we consider the number of offices it performs, it is no wonder that we find so many lame horses, with the present method of shoeing. Nature intended the frog to act a prominent part in the foot.

- 1st.—To act as an elastic cushion, breaking the concussion when moving on a hard road, at the same time causing the heels of the foot to expand whenever the weight is brought upon the foot.
- 2nd.—By its being kept in use, the natural secretion, or moisture, takes place, which furnishes moisture to the hoof.
- 3rd.—The frog while in use will keep large and wide, and prevent the heels from contraction.

We condemn the common shoe, as being an injury to every horse to which it is applied, as we find in nearly all cases where horses have been shod for a

few years, there is lameness. The disadvantage in the common shoe is: 1st.—The bearing is not natural. 2nd.—The frog is thrown out of use, causing a jar when the horse is traveling on a hard road. 3rd.—There is no expansion of the heels, the natural secretion of the frog is lost, and it soon becomes small, dry and hard. 4th.—The principal weight being



*Foot, representing
the plate shoe ap-
plied properly.*

brought upon the heels of the foot, bruising the sensitive laminae (or commonly known as the quick), and causing what is termed corns.

The shoe recommended in this work (called the plate shoe) will, when properly applied, give the animal the natural bearing. (See illustration.) The frog is protected from injury, and at the same time kept in use. A weak walled, or nat-

ural flat foot can be kept natural with the plate shoe. With the common shoe the sole of the foot gives way in time, and the animal is useless on a hard road. It will no doubt be a difficult matter to change the present views of many blacksmiths and horsemen in regard to the frog. Many have it cut away; others say it was never intended to be used. We then ask why it is that horses that never have been shod have no corns, contraction or other diseases of the foot, which are found in the feet that are shod with the common shoe. It can plainly be seen on a shoe that

has been worn for some time, that at every step of the animal, the heels were forced inward. With the plate shoe, or without a shoe the heels will expand outward. When a shoe projects outside the heels, or extends back of the heels, it is often caught with the hind shoe and torn from the foot, and sometimes causes the animal to be thrown, producing injuries of the foot or limb. Never have a horse shod that has a hard, dry foot. Always use the poultice recommended in this work. No difference what kind of shoe is used, or how careful the smith may be in shoeing, no benefit can be derived.

HOOF ROT, OR TENDER FEET.

What is generally known as Tender Feet, is one of the most common afflictions to which the horse is subject. No animal has tender feet unless they are diseased or worn off. When in a healthy condition, the hoof is very hard and tough—having a bluish or lime-stone color. Instead of the term “tender feet,” it would be more correct and explicit to use that of “hoof rot.” This is what the disease really is :

SYMPTOMS.—The Disease may be recognized by the dry, chalky appearance of the bottom of the feet, which may be easily dug out with a knife or chisel. The frog of the foot is obviously diminished in size ; and some times there is swelling of the ankle joint, when the horse remains standing for any length of time. The steps are short and lame, indicating plainly the soreness of the feet. the effected member being put forward, and thus rested ; or, if both feet are dis-

ceased, the horse will advance first one foot and then the other. In the most of cases, Sweeney will follow, and for which the inexperienced horseman is apt to mistake it.

TREATMENT.—Clean off the bottom of the feet ; dig out the pumised, chalky matter, and pare down the sides or walls of the hoof, and use the following poultice : Pour one gallon of boiling Rain Water on four quarts of good ashes ; let stand until the water becomes slippery ; then pour the clear, weak lye on four quarts of bran ; mix well, so as to make a poultice ; apply to the feet in sacks, which can be prepared out of heavy cloth—large enough so as to admit the foot easily ; tie just above the hoof with a strip of cloth ; twine will not answer, as it is apt to check the circulation of the blood. The poultice should be changed night and morning ; three applications is all that is required. Always apply the poultice as warm as the animal can stand it. If this treatment does not effect a cure, then use the Sweating Liniment around the top of the hoof once a day, for three days ; the fourth day grease with lard, and continue to grease until the scurf is all removed.

HOOF BOUND OR CONTRACTED FEET.

The frog being placed at, and filling the rear part of the foot, assists in a material degree in the expansion of the foot. It is formed internally of two prominences on the sides, and a cleft in the center, presenting two concavities, with a sharp projection in the middle, and a gradually rounded one on each

side. It is also composed of a substance flexible and elastic. What can be so well adapted for the expansion of the foot, when a portion of the weight of the body is thrown on it? How readily will these irregular surfaces yield, and spread out, and how readily return again to their natural state. In this view, therefore, the horney frog is a powerful agent in opening the foot; and the demunition of the substance of the frog, and its elevation above the ground, with the use of the common shoe (see illustration), are the causes and the consequence of contraction.

TREATMENT.—The first and most important part of the treatment of hoof-bound is to get the hoof soft and elastic. To accomplish this use the bran and lye poultice. There is no remedy known that is equal to this; it will not only soften the horn and frog, but

will remove the greater portion of soreness in the feet. The next treatment to follow after the foot is properly poulticed, is to apply the improved plate shoe (see illustration). Have the plate to rest upon the frog, so as to remove the bearing from the heels. The

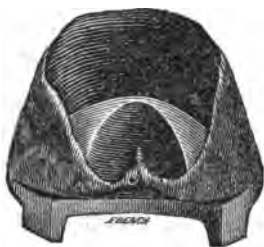


Foot representing the common method of shoeing.

plate or bar can be shaped so as to fit the frog. In some feet, when the horn at the heels cannot be cut

away sufficient to admit a bearing for the frog, the plate or bar can be bent up; and when applied to a flat foot with a large frog, the bar or plate can be bent down, so as to fit the foot.

The shoe when nailed on, must not be drawn as tight as a common shoe. Use but three nails upon the inside, and four on the outside of the foot. After the shoe is applied you will readily notice that the heels will expand when the weight is thrown on the



*A foot representing the
Plate Shoe with the
bearing thrown off
the heels.*

foot. The next treatment after the shoe is applied, will be to use the sweating liniment: Corrosive sublimate, Gum camphor, Alcohol, of each 1 ounce; Spirits of turpentine, four ounces. Grind the corrosive sublimate fine, then add the alcohol and shake well, then add the camphor and turpentine, and

in two days it will be fit for use.

Apply once a day around the foot just above the hoof, extending it up from the edge of the hoof about two inches. Three applications is all that is required in most cases, When well blistered, dress with lard; wash the foot every three or four days with castile soap and water, and when dry use the lard. Continue this course until the scurf is all removed; then use the liniment again and dress in like manner, if the lameness is not removed.

CORNNS.

In the angle between the bars and the quarters, the horn of the sole has sometimes a red, or blood-shot appearance. This is called corns, and many suppose this a disease bearing a resemblance to the corn of the human being. This is a mistake. It is an injury of the laminæ (or quick) of the heels, resembling an injury of the finger or toe nail of a human being, when a bloodshot appearance can be seen underneath the finger or toe nail. The sole of the horse's foot is filled with small pores, intended by nature to hold moisture for the foot. That part of the sole immediately under the injured laminæ becomes filled with blood. When corns are neglected, so much inflammation is produced in that part of the sensitive sole, that suppuration follows, and the matter either undermines the horny sole, or is discharged at the coronet, and often called gravel. Corns are most frequent and serious in horses with thin horn and flat soles, and low, weak heels. They do not often occur in the out side heel; it is of a stronger construction than the inside one.

The treatment practiced by most people is wrong. Cutting the corn out, as it is called, is merely cutting the insensible sole away, and exposing the sensitive sole. Burning with a hot iron, or using caustic of any kind, does more harm than good. Equally consistent would it be, were it consistent, to cut through the finger or toe nail when injured, and burn or cauterize the sensitive parts.

TREATMENT.—The treatment for corns will be the same as for hoof bound. In almost all cases of corns, there will be found contraction, or a turning in of the horn at the heels. It is well to attend to the health of an animal that has hoof bound or corns, and in a majority of cases where the animal has been afflicted for some time, a purge pill should be given, which is made as follows:

Powdered barbadoes aloes, six drachms ;

Powdered gention root and ginger, of each one drachm ;

Mix with molasses to form a pill, or dissolve in half pint of water, and add one teacupful of molasses, and give as a drench.

OSSIFICATION OF THE LATERAL CARTILAGES.

These are gristly projections from the os-pedis, or coffin bone in the foot, arising from contraction of the hoof and other causes. These cartilages can be readily felt at the heels and when in health can be moved outward with the fingers, without injury to the animal. In feet that are afflicted with contraction and corns, they become inflamed, in consequence of which transformation takes place, converting them into bony masses ; in this condition the heels become thickened, and in severe cases, bulging out considerably. When confirmed the disease is incurable.

TREATMENT—As this disease is the result of hoof bound or contraction, the same treatment is required.

TO PREPARE THE FOOT FOR THE SHOE.

The ground surface of the crust on which the shoe has rested requires, after the cautious removal of the shoe, to be gently rasped, to remove the ragged edges and any stubs of the nails: the sole occasionally requires paring out with the knife, which is again needed in a strong foot to level the crust and give it an equal bearing for the shoe. But this in healthy feet is all that is required, either of the knife or rasp. The tough, horny, elastic frog, must be left untouched, to fulfill its functions as an insensible pad, obviating concussion and supporting weight. The bars, valuable as they also are in supporting weight, must likewise remain intact; whilst the sole, which even high authorities advised to be thinned until it yields to the pressure of the thumb, must never, in ordinary circumstances, be meddled with. Should there be found a crumbly dead substance, as will be found in nearly all feet that are diseased, it should be removed. The sole is the natural protection of the delicate internal parts, is infinitely superior to the leathers and pads substituted for it, and if left in its natural integrity, will protect the animal from many a bruised sole.

I recommend the Plate Shoe on the forward feet only, and especially on horses for road work. Will admit that horses intended for farm work exclusively will do with the common shoe. As the animal is constantly on soft ground, the frog then is in use the same as if a plate shoe was used. Many blacksmiths-

when the shoe is put on and clinched, down, rasp the surface of the crust freely all over, to give the finishing polish to the job, but the practice is unnecessary and irrational, and ought to be discountenanced.

APPLICATION OF THE SHOE.

In applying the shoe to the foot, it should not be set back half or three quarters of an inch from the toe—the projecting parts of the wall cut away—as is usually the custom. The shoe should be carried fully to the outer margin of the wall; thus we preserve the wall unin-



jured. By removing any portion of the crust, it is weakened in exact proportion as it is cut away — reducing space for driving nails—and increasing the danger of

pricking; or what is as bad, driving the nails too close; it is these abuses which compel us to regard shoeing the great evil of his domestication. The nails should be properly pointed, and not driven too high up; care should be taken to have the nails driven as regular as possible. Three nails on the inside and four on the outside, are all that are required for any purpose. Twisting the nails off with the claw of the hammer, and filing under the clinch, is wrong; by twisting the nail off, the nail often twists inside the shell—causing

the hole to become larger than the nail, and by filing under the clinch, removing the enamel or strongest part of the shell, leaves only the soft part of the hoof to clinch on. Clips should not be used; they are the frequent cause of an obscure lameness, which is very difficult to manage. The mischief is done by the horn in its downward growth, meeting with the resistance which the clip offers; hence, the horn is turned inward upon the inside toe, causing pressure and inflammation; and from pressure, the bone is absorbed at the toe. The heels of the shoe should be brought around with the walls of the foot, not left projecting out for the horse to get caught with by the hind shoe when getting up, or traveling in a muddy road.

SHOEING.

Shoeing is generally regarded as a necessary evil; and were it not for our turnpike roads, an evil which might in a great measure be dispensed with. As it is, our object should be to observe as closely as possible three important rules in shoeing horses: 1st. To preserve the natural bearing of the foot. 2d: To preserve the hoof in its natural shape. 3d: To protect the feet from injury. Never have a horse shod with a hard, dry foot. Always poultice the foot when it is hard and dry. No difference what kind of shoe is applied, or how careful the smith may be in shoeing, no benefit can be derived. I would say to all, follow the instruction laid down in the article on the foot.

HARLAN'S HORSE OVERREACHING.

Many persons regard Overreaching as an indication of a bad horse, yet we are compelled to recognize it as a fault in some of the best. It frequently occurs with young horses on a moderate gait, and disappears altogether on increasing the speed of the animal. It arises from the great activity of the hind legs, the fore ones not being able to get out of the way in time. This habit is often brought on by too heavy shoeing behind, and too light shoeing in front. By reversing this principle, I have found it to answer an excellent purpose. Where this habit is allowed to go unchecked, the heels often become bruised, and in some instances the shoes are torn off from the front feet—causing much mischief to arise in consequence. This habit, too like interfering, occurs in young horses after severe driving—from becoming leg-weary—a circumstance which should be carefully avoided, as habits are easily formed, but often most difficult to be got rid of. The preservation of the horse's feet depends very much upon careful and skillful application of the shoe, independently of its being constructed on correct principles. Many horses with very bad feet are enabled to go sound for many years by careful shoeing, while a bungling hand would render the same animal unfit for service in a single shoeing. It requires considerable tact to fit a shoe properly on a bad or weak foot, so as to protect it from injury.

STOPPING AND SOAKING HORSES FEET.

The common practice of constantly soaking horses feet, is all wrong. The objection to soaking the feet, in hot or cold water, is that the feet soon loose the moisture, and the hoof becomes dry and brittle. A very popular notion exists, that cow manure has a wonderfull effect on a dry hoof. It will soften the horn, but will not toughen it, and if continued for any length of time, thrush will be the result. The remedy, aside from its objection on the score of decency, savors too much of by-gone days, when live eels were sent on an errand down horses' throats to unravel their intestines.

Horses that have dry, brittle feet and are not lame, should have a few applications of the bran and lye poultice. The moisture in the poultice will toughen the horn, and will last at least one week, unless in very warm weather. The same is an excellent application to apply to the bottom of the foot when the shoe is on.

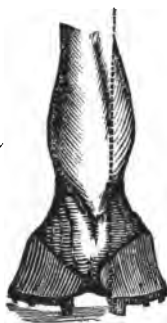
The following Hoof Liquid is also one of the best applications known to cause the horn to grow, and keep the foot moist :

Neet's Foot Oil, half pint ;
Oil of Tar ;
Oil of Origanum ;
Turpentine, of each, three ounces.

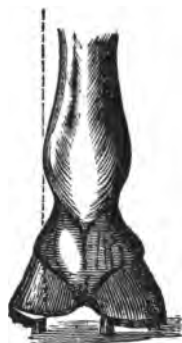
Mix. Apply to the bottom of the foot once or twice a week. It will keep the foot moist, and cause the hoof to grow very rapidly.

INTERFERING.

Our first object is to ascertain, if possible, the cause of interfering. Many horses strike from weakness, or long-continued exertion. Particularly is this the case in young animals. Others cut from faulty conformation of the limbs ; the toes turning in or out too much is a frequent cause. By applying white paint to the injured parts, we readily discover the precise part of the foot which does the injury. In all



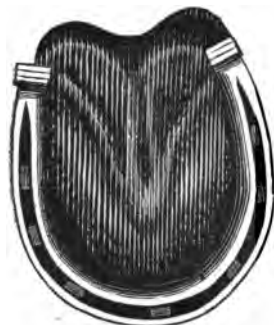
A foot representing the shoe brought around at the heels of an interfering horse.



A foot representing the heel of the shoe thrown out to prevent interfering.

cases when the colt is first shod, a light shoe should be used. It will be found that many horses wear either the outside or inside of the foot the most ; then to level the foot, as is often done, the animal is sure to cut. The foot should be paired as it is worn, and the shoe, when nailed on, will then give the horse the same bearing that he had before he was shod.

Many suppose the horse strikes with the heels, which is a mistake. It will be found by using the test recommended above, that the animal strikes with the widest part of the side of the foot. When the heels of the shoe are brought around under the foot, the bearing comes in the center (see illustration), and will cause many horses to cut.



Foot representing a shoe for interfering.

We must deviate from our rule in shoeing, by making the shoe straight on the inside, from the part which he strikes, back to the heel, (see illustration) so as to bring the bearing as far out as the portion which has been injured. There is no need of raising the inside of the foot, as is often done. When the pastern joint is enlarged with cutting, a strip of India rubber should be placed between the shoe and the foot, projecting a half inch beyond the shoe. This being soft and elastic, will not bruise the part struck by the shoe or foot, giving it time to heal, and cause the animal to work clear in traveling. This plan is successful if properly applied, unless in cases of natural deformity or faulty conformation in the limbs.

THRUSH.

This consists of inflammation and ulceration of the sensitive surfaces within the clefts of the frog,

with the consequent discharge of a foetid muco purulent fluid. It results from horses standing in foul, damp stables, is often seen among colts in wet, dirty straw yards, and frequently results in lameness.

TREATMENT.—Apply the poultice recommended for all foot diseases. Carefully remove the deceased horn, and apply the sweating liniment once a day for two days. In two or three days repeat if necessary. It rarely requires a second dressing.

CANKER.

This is a more aggravated form of thrush, often proving very troublesome to manage. It is a continuation of thrush between the horny frog and the internal structure of the foot, causing separation between them.

TREATMENT.—The same as recommended for thrush.

QUARTER CRACK.

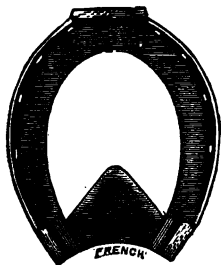
This is sometimes the result of driving on a hard road, when the hoof is hard and dry, and is often found on the inside of the foot.

TREATMENT.—Poultice for a few days, then apply the plate shoe, removing the bearing from the quarter affected, and permitting the bar or plate to rest well upon the frog. Apply the sweating liniment around the coronet over the part affected, once a day for three days, then dress with lard until the scurf is removed, and apply again. A few months patient and rational treatment will usually accomplish a cure.

SPLIT HOOF OR TOE CRACK.

This is nearly the same as quarter crack, only differently located. It usually commences at the coronet, goes down the foot and reaches to the toe. It is, also, always found in a hard dry hoof.

TREATMENT.—Always pear out the crack so as to convert it into a groove. Poultice for a few days, and apply the plate shoe, having the bearing rest well upon the frog, and remove the bearing in the front of the foot between the forward nails. We thus avoid all the appliances that are usually applied around the hoof; and drawing the parts together with nails is often injurious. If the shoe is properly applied, the crack will close when the weight is brought upon the hoof. Apply the sweating liniment the same as recommended for quarter crack. A horse with quarter crack or split hoof must be kept

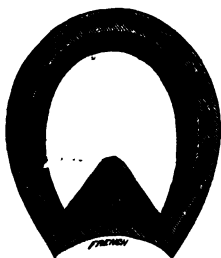


*The ground surface
of the plate shoe.*

off the hard roads. If the shoe remains upon the foot any length of time, the hoof immediately underneath the injured part is apt to grow, so as to bring a bearing on the shoe. This must be closely watched, and if found bearing on the shoe, the hoof should be pared off. This can be done without the shoe being removed.

INJURIES OF THE FEET.

Lameness is often caused by nails in the foot. In many cases when the animal steps on a nail, the nail being fast to a plank or board, the wound is as severe as if the nail remained in the foot, and the injured spot is more difficult to find. In all cases poultice with the bran and lye poultice. On the removal of the poultice, by tapping over the bottom of the foot, the injured part can be found, and a free opening must be made through the hoof, or sole, but do not plug it up again with rosin, as many do. Apply the poultice, and continue until the horse is well.



*The bearing surface
of the plate shoe.*

The same treatment should be applied in cases where the foot is corked. Remove the detached parts of the hoof with a knife, and when the horse is taken out of the stable, tar should be applied over the wound. It is also well to observe the pulse, in case of any injury which is very painful,

and if found excited, give upon the tongue a teaspoonful of the fever medicine three or four times a day.

PRICK OF THE SOLE.

CAUSES.—Generally the blacksmith's carelessness when shoeing the horse.

SYMPTOMS.—Great lameness immediately after the shoe is applied.

TREATMENT.—Withdraw the nails of the shoe. If one is wet, cut down on that hole until the sensitive sole is exposed. Apply the poultice for a few days, and when the shoe is again nailed on, remove the bearing at the injured part.

GREASE OR CRACKED HEELS.

CAUSES.—Age, debility, excessive labor, filth, neglect, cutting the hair off at the heels, and turning out to grass in the cold months.

SYMPTOMS.—Scurviness and itching of the legs, hair stands on end, moisture exudes and hangs upon the hair in drops, swelling and excessive pain.

TREATMENT.—Open the bowels with the following pill: Barbadoes Aloes, one ounce; pulverized Gentian and Ginger, of each one drachm, and warm water sufficient to make a pill; wash the parts well, and poultice for two or three days with the bran and weak lye poultice. Then apply Glycerine half a pint, Carbolic Acid one ounce, and one pint of strong solution of Oak Bark; Mix. Wet three or four thicknesses of cloth and apply; change them as often as they become hot, until the inflammation is gone.

SCRATCHES.

This disease is well known to all horsemen.

TREATMENT.—Wash the parts well with Castile Soap and water, and when dry apply the same remedy as recommended for grease, or try White Lead mixed with oil. In recent cases this is all that is required. In many cases the blood is in bad condition,

then give in the feed one teaspoonful of the following: Sulphate of Iron, two ounces, Powdered Gentian, Powdered Hyposulphite of Soda, of each two ounces. Mix.

RING-BONE.

This is one of the most common diseases, involving the front as well as the hind limbs.

CAUSES.—Strains, sprains, or blows upon the parts, causing an inflammatory condition of the cartilaginous cushion, which cover the uniting surfaces of each bone, or of the ligaments that surround the joint. The inflammatory condition of the joint may be considered the exciting cause of ring-bone. It is not always that ring-bone causes lameness. When there is no lameness, no treatment is required. The enlargement cannot be removed. When there is lameness, the cartilage or cushion between the joint is involved, which permits the bones to grind one upon another. Anchylosis or union of the bones is the only remedy. When there is a heat detected, apply cooling embrocations, such as vinegar and salt, as warm as the animal can stand it; when the fever is removed, apply the sweating liniment, Corrosive Sublimate one ounce, Alcohol one ounce, Gum Camphor one ounce, Turpentine half pint. Grind the Sublimate and Alcohol together, then add the Camphor and Turpentine. Shake well. Let stand two days and then use once a day for three days, then dress the parts well with lard, and wash with soap and water until the

scurf is removed. Repeat in four weeks if the animal is still lame. The animal must be kept quiet in the stable for at least three or four weeks, as no treatment will be of any benefit if the animal is used or permitted to run in the field. It is also well to attend to the general health of the animal; in many cases an active purge will be of great benefit, followed with soft, light food. Cutting the feeder out and applying strong medicine and many other remedies that are often recommended, frequently do more harm than good.

SPLINT.

This is a bony deposit, situated between the cannon and splint bones, well known to all horsemen, rarely causing lameness, except when it is situated so as to interfere with the action of the knee-joint, or at the lower extremity of the splint-bone. Few horses attain the age of eight years without having them; they disappear in time by spreading over a greater surface of bone, becoming flat upon the surface, giving rise to the opinion often indulged in by horsemen, that old horses never have splints. Splint is a disease of the same character as spavin, is often found on the outside as well as on the inside of the limb, and requires the same treatment. Use the Sweating Liniment once a day for three days, then grease with lard until the scurf is removed.

BONE SPAVIN.

This is a very common disease, located in the hock joint of the horse, arising from strains, sprains,

bruises, punctured wounds, in fact anything that will produce inflammation in the hock, will produce spavin.

SYMPTOMS.—The first symptom that will be noticed, is a lameness on first starting; after the animal moves a short distance, all lameness disappears. There is often lameness in the hock joint without any enlargement. By turning a horse short or causing him to move in a circle, the lameness can be distinctly seen. This is called *Occult Spavin*.

TREATMENT.—Will be the same as Ring-Bone. Apply vinegar and salt as warm as the animal can bear, for a few days. At the same time give a purge pill, keep the animal quiet, as no treatment will be of any benefit while the animal is moving around. When all the inflammation is removed, apply the Sweating Liniment once a day, for three days, then dress with lard until the scurf is removed. If necessary, repeat the application. It would also be well to rub lard upon the leg from the lower part of the spavin down, before each application of the liniment, so as to prevent the liniment from taking effect below the joint. Remember the lameness only can be cured, the enlargement cannot be removed, as is often claimed by many.

BOG OR BLOOD SPAVIN.

This is a puffy swelling, upon the inside, and front part of the hock, caused by an abundant secretion of synovial fluid, or joint oil. It occurs in rapidly growing animals, sometimes without any apparent cause, but more commonly in those that have

been put too early to work beyond their strength.—It rarely causes lameness or other inconvenience, being nothing more than an eye-sore.

TREATMENT.—In young colts it will generally disappear when they are turned out to grass. In older animals it sometimes disappears when they are exercised.



A Representation of a Bandage for Blood Spavin.

In all cases where treatment is required the bandage or compress is to be used. To get a bandage made, get the exact size of the hock joint by cutting a pattern of paper first. (See illustration of bandage.) A good stout piece of paper, large enough to go around the joint. Cut the shape as is shown in the illustration, then fit to the joint snugly so it just meets in the front part of the leg. Then have the harness maker cut out a piece of leather the same size as the pattern. Then cut the piece that is above the hock out and have a piece of good rubber sewed in its place. (A piece of suspender will answer.) The buckles should then be sewed on, and a soft piece of leather stitched upon the inside to

form a pocket immediately over the enlargement. This pocket is then stuffed with hair or cotton. The compress should only be applied at night. The animal should either be used or let run out during the day, and in about one week the enlargement will be entirely gone. It is the



*A Hock joint
with the
bandage
applied for
blood spavin.*

only bandage that can be kept on the horse's hock joint. When the leg is raised the rubber over the top of the hock joint will give and the bandage will remain in its place. It will be well after the enlargement is removed to apply a blister and give the animal a month's run at grass. The sweating

Liniment will answer. Apply once a day for three days, then dress with lard and every other day wash with soap and water, and when dry grease, continue until all the scurf is removed. This treatment will succeed in curing the majority of cases. Except when lameness is connected with blood spavin, then the sweating liniment should be used the same as for bone spavin.

THOROUGH PIN.

This is the same disease as Blood or Bog Spavin, only in an aggravated form. A round tumor that can be forced through the leg.

TREATMENT.—Same as recommended for Blood or Bog Spavin.

CURB.

This is an enlargement, which makes its appearance on the hind legs about two inches below the hock. It is sometimes occasioned by a blow. But the most frequent causes is a strain of the sheath, through which the flexor tendons pass. If seen in its early stage, it would in all probability, yield to rest and cooling applications. But if neglected until effusion takes place, or the surrounding tissues become injected and thickened, then a different course of treatment must be adopted.

TREATMENT.—Our usual remedy, is the Sweating Liniment; apply once a day for three days; then dress with lard until the scurf is removed. In two weeks, if the enlargement has not all disappeared, repeat the application. Another very good remedy for Curb and all enlargements about the limbs of the horse—is Biniodide of Mercury, two drachms; Lard, one ounce; mix. This should be rubbed upon the enlargement twice a day until the parts are well blistered; then wash with soap and warm water, and dress with lard until all the scurf is removed. This is a milder remedy than the Sweating Liniment, and is much easier handled, but will not remove the enlargement so quickly. Neither of the above remedies will leave a scar or blemish, if applied as directed.

CAPPED HOCK.

This is a puffy swelling of the cap of the hock, containing a serous fluid. It is caused by bruises in

kicking against the side of the stall, and by not having sufficient bedding.

TREATMENT.—First remove the cause ; if caused by kicking, buckle a strap around the leg just above the hoof, with a piece of chain attached eight inches long ; this will break the habit of kicking. In recent cases by rubbing soft soap well on the parts in the morning, and washing off with warm water in the evening, in a few days this will often remove them. Cases of long standing, when the enlargement becomes hard, an operation is the only remedy ; dissect the entire enlargement out. Heal the wound with Glycerine, two ounces ; Carbolic Acid, half ounce. Apply twice a day.

CAPPED ELBOW

This is very common, especially among heavy horses. It is caused by the animal lying on the heel cork of the shoe, narrow stall, or thinly bedded. It consists of a bursa, which, as in "capped hock," has been injured, and has consequently enlarged. It differs from Capped Hock, as it is liable to ulcerate and become senuous, when allowed to remain until it is of extreme magnitude.

TREATMENT.—Apply the vinegar and salt as warm as the animal can bear it, for a few days, then lay the parts open well with the knife, introduce the finger, and remove all the ragged parts. Apply the Glycerine and Carbolic Acid, as recommended for Capped Hock.

SWOLLEN LEGS.

This is generally caused by debility. In course bred horses, the hind legs will stock when standing upon a plank floor. In cases where the parts are hot and tender, soft water should be applied, as hot as the animal can bear it, for one hour, then rub dry and bandage with flannel bandage. Give a purge pill, follow by feeding Tonics—Sulphate of Iron, two ounces ; Powdered Gentian, two ounces ; Powdered Hyposulphite of Soda, two ounces. Give one teaspoonful three times a day in bran or cut feed. Give moderate exercise daily.

WINDGALLS.

CAUSES.—Hard work, bruises, &c.

SYMPTOMS.—Small enlargement, generally formed upon the hind legs, both on the inside and outside. No lameness, after extraordinary labor, the swelling disappears, sometimes continued irritations will cause the windgalls to greatly enlarge, and ultimately causes the sac to change into bone. During this change the horse is very lame.

TREATMENT.—Fold pieces of rags, wet them, put these on the wind galls ; place on the rags pieces of cork, and over the cork, place on an India-rubber bandage. Mind this bandage is constantly worn, save when ridden or driven. Rest is the only alleviation for the change of structure.

FOUNDER.

Certain attacks of inflammation which frequently make their appearance in the horses' feet, have re-

ceived the name of Founder, but for what reason it would be difficult to see, since there is not the least apparent connection between the term and disease to which it is applied. The common theory among farmers is, that the horse becomes foundered from over-eating or from drinking too much water, the founder descending suddenly to the feet. The disease is known by a variety of names in different sections of the country. For instance: Water founder, Corn founder, Grass founder and others. As to a cure, these persons imagine that the great object is obtained if the founder can be restricted and kept from settling down to the extremities of the limbs. In reality, however, the founder is not only in the feet already, but has probably been established there for days, or perhaps for weeks. The sensible portion of the foot within the hoof, and the bones in the immediate vicinity, the coffin, the pastern and shuttle bone, are filled with little blood vessels, which supply these parts with material for nutrition. The inflammation to which this region is subject, is commonly acute in the case of Founder, and liable to be developed suddenly.

CAUSES.—Although our space is limited, we cannot pass this common disease, without giving it a more satisfactory explanation than has generally been given by the most of writers: There is but one cause for Acute Laminitis (Founder,)—man's brutality. Horses with "hoof rot," are more liable to be affected than those with sound feet. Yet all are subject to the disease. Horses driven far and long,

over hard, dry roads, frequently exhibit the disease.

SYMPTOMS.—After a hard drive, the animal is often left in a draft of air. A short time only, is required to produce the acute stage of the disease. Often the horse is put up for the night, and without any of the symptoms being noticed. The next morning the horse is found all of a heap, and the food untouched; the flesh is quivering; the eyes are glaring; the nostrils are distended, and the breath is jerking; the flanks are tucked up; the back is roached, and the hind legs are advanced to take the bearing from the inflamed fore members; the front feet are pushed forward so as to receive the least possible amount of weight, and that upon the heels; the feet are hot; the pulse full, firm, and about seventy.

TREATMENT.—First get the forward feet in hot water—as hot as the animal can stand. If you have no foot bath, strong wooden pails will answer, if a board is cut to fit under the bottom to prevent the bottom of the pail from being forced out; not having any pails, use woolen cloths of three or four thicknesses, secure them around the foot, and pour the hot water upon the cloths. As soon as this has been accomplished, give one teaspoonful of the fever medicine upon the tongue, and continue to give every half hour until four doses are given, then give every three hours. A purge pill should be given as soon as it can be prepared. The hot water application must be kept up at least one hour, or until the hoof becomes soft. Then remove the shoes, by first cutting

the clinches so that the shoe can be taken off without wrenching it off, as the smith usually does. Have a pair of sacks prepared; also the bran and lye poultice, so as to slip on the feet as soon as the shoes are removed. This should all be done quietly, then place the animal in a quiet place with a good bed of straw. The sooner the animal will lie down and relieve his feet from the weight, the better it will be for him. In twelve or fourteen hours the purge will operate, and there will be relief. If there is any soreness remaining in the feet, the Sweating Liniment should be used the same as directed for "hoof-bound," or "contraction."

SHOULDER STRAIN

This is one of the most easily detected injuries to which the horse is liable, as the symptoms are well marked. If the injury is severe, the shoulder swells in consequence of the inflammation. The toe drags upon the ground whenever the animal moves forward. In recent cases, foment the parts well with hot water for half an hour, then rub dry; use the following liniment twice a day: Alcohol, one pint; Gum Camphor, two ounces; Turpentine, one ounce.

SWEENEY, OR FALLING AWAY OF THE MUSCLES.

A shrinking of the muscles, either of the shoulder or hip, is called sweeney.

CAUSES.—A long continued pain, a nail in the

foot, an injury of the shoulder joint, a ringbone or a spavin, will often produce this disease.

There is no trouble to locate a lameness that is in the fore part of the horse. If the lameness is in the foot the horse will raise his foot as well as a sound horse, but if the lameness is in the shoulder he will drag the leg and often swing the foot out; a lameness in the foot, or an old chronic disease in the foot, will produce sweeney in the shoulder.

Now, there no use in doctoring the shoulder if the disease is in the foot; treat the diseased part, whether in the foot, leg or shoulder, as recommended for such disease, and little trouble will be met with in the cure of sweeney. A seton, or stimulating liniment, such as the Veterinary Liniment, applied once a day, will soon bring the muscles to their natural standard.

GALLS.

These are generally caused by friction or unequal pressure from the saddle, collar, etc. Bathe the parts with the Veterinary Liniment; or use tincture of Aloes, one ounce; tincture of Myrrh, two ounces; mix, and use two or three times a day. White lead will sometimes effect a cure.

WATER FARCEY, OR YELLOW WATER.

This disease is known by different names. The general symptom is swelling of the belly, either between the front legs, or the back part of the abdomen. At first the parts feel flabby, and appear as if filled with fluid; then as the swelling extends over a

large surface, it becomes hard, and frequently breaks out, discharging a yellowish fluid.

TREATMENT.—In the first stages when the parts feel soft, apply the mustard and vinegar rubbed in well, give plenty of exercise, and feed the Tonic Powders, one teaspoonful three times a day on the feed. When there is a discharge of yellowish fluid, wash the parts with a strong solution of sal petre water—half pound of sal peter dissolved in half gallon of hot rain, water. Apply twice a day. When the swelling is hard, and the impression of the finger is left when pressed on the parts, scarify with a sharp knife, and apply the sal petre water hot as the animal can stand it. Give a Purge Pill, then give the the Tonic Powders in the feed three times a day; also give plenty of walking exercise. This treatment will cure the worst cases.

CRAMP OR STRAIN OF THE WHIRL-BONE JOINT.

This disease, even when it exists in a severe form, is seldom suspected by the most experienced horsemen, in consequence of the peculiar manner in which the animal is handled. The horse appears perfectly well, but on attempting to make him move around in the stall, or to back sudden, he then appears to have lost all power of motion of one of the hind legs. By the animal making a few efforts, the leg is again all right, and if kept moving nothing more will be noticed until he is left standing for a short time. Many will call this disease spring-halt.

The disease is located in the whirl-bone joint, caused by a severe strain of the ligaments or muscles surrounding the joint, and sometimes causes severe lameness. The animal will often rest the leg by letting the pastern joint rest on the ground.

TREATMENT.—Give absolute rest, and apply the sweating liniment once a day for three days over the joint; grease with lard the fourth day; continue to grease and wash the parts until the scurf is removed. It is well to grease with lard below the joint, to prevent the medicine which may run down having any effect. A space of six inches in circumference immediately over the joint should be wet with the liniment.

RHEUMATISM.

This disease is rarely met with except in this State (Ohio). It appears to be very common in this climate.

SYMPTOMS.—Stiffness in moving about, and sudden in its attack. The animal is lame first in one leg and then in another; the joints are sometimes swollen and are painful to the touch.

TREATMENT.—Give a Purge if the animal is in good flesh; if not, give bran-mashes with one teaspoonful of powdered Colehicum seed mixed with the bran-mash twice a day. Bathe the parts with hot water twice a day, as hot as the animal can bear it for one hour, then rub dry and apply the following liniment: Alcohol, one half-pint; Oil Organum, one

half ounce. If the pulse is above the natural standard give the fever medicine three times a day.

COLIC.

There are two kinds of Colic ; Spasmodic and Flatulent Colic. Among the causes of Colic, are the drinking of cold water when the horse is heated ; change of feed ; exposure to cold air or a wind, after a hard exercise. In some horses there seems to be a constitutional predisposition of colic. They cannot be hardly worked or exposed to unusual cold, without a fit of it. In the majority of cases of colic, if not relieved in a short time, it will terminate in inflammation of the stomach and intestines, or a rupture of some of the internal organs. It is very important to discriminate accurately between colic and inflammation of the stomach and bowels.

SYMPTOMS OF SPASMODIC COLIC.—Sudden in its attack ; pulse rarely quickened in the early period of disease ; legs and ears of the natural temperature ; the animal, if at work, suddenly slackens his pace—prepares to lie down, or falls down as if he were shot, paws, looks around and points with his nose to the center of the body.

TREATMENT.—Care should be taken to prevent the animal from throwing itself upon the hard ground. The stomach is often ruptured when distended with gas ; a good soft place should be selected for the animal to roll. Give as a drench, Hyposulphite of Soda, one ounce ; Laudanum, one ounce ; Aromatic Spirits of Ammonia, half ounce ; Tincture

of Aconite Root, twenty drops ; Warm Water, half pint. In severe cases, there is generally a frequent evacuation of small quantities of dung, which is hard and dry. In cases of this kind, there should be added to the above drench, Powdered Barbadoes Aloes, six drachms. If not relieved in half an hour, apply to the abdomen and flanks, Powdered Mustard mixed with Warm Water to form a thick cream or paste ; rub in well with the hand. If, at the end of two hours, there is no abatement of the symptoms, repeat the drench with the exception of the Aloes.

FLATULENT COLIC.

Whether occurring primarily, or subsequent to an attack of spasmodic colic, is a condition from which much more serious results are to be apprehended than from the spasmodic form of the disease.

Its causes are—food which easily undergoes fermentation, such as green or new corn, green clover, brewer's grains, wheat and boiled food. In this form of colic the expression of pain, though not so acute, is much more constant than in the first named form ; the abdomen is more or less distended (bloated), the pulse soon becomes rapid and feeble, the breathing difficult and mostly thoracic, the extremities become cold, there is more or less delirium, the horse reels to and fro, twitching of the muscles, retraction of the lips, and if relief be not afforded, death ensues either from the blood poisoning from absorption of gases, or rupture of some portion of the intestines. When the animal lies down or rolls, it is observed that it

performs these acts much more carefully than when suffering from spasm.

TREATMENT.—The same treatment as for Spasmodic Colic is required. If the pain is very great, add two ounces of Laudanum instead of one. Injections are of great benefit in this disease, and in fact in all cases of colic, clysters of warm water with a little salt and soap added, should be thrown up the rectum every half hour with a large syringe or bladder, with a long nozzle attached to the neck of it. One favorable sign of the subsidence of Colic, is free urination; it shows that the spasm of the neck of the bladder has subsided in sympathy with the subsidence of that within the intestine.

IMPACTION OF THE COLON.

The symptoms in this disease are very similar to Spasmodic Colic. Animals over-abundantly fed, or kept upon food containing much woody fibre, are liable to suffer from the accumulation of such matters in the colon and cæcum. The diagnostic characteristics of this, in addition to general abdominal pain, are a tendency to push backwards; to press the tail against any solid object; to resist by violent straining the introduction of the hand into the rectum. In some cases the hard and impacted mass may be felt by the hand introduced into the rectum, and there is also some enlargement or distension of the abdomen.

TREATMENT.—Should be the same as for Colic. An examination should be made through the rectum, and if a hard body is felt, and the animal is not re-

lieved with the treatment in six hours, dissolve two ounces of Aloes in a pint of hot water, and inject with a syringe having a long flexible tube. If this be retained for an hour or two, it generally has some effect ; but if immediately expelled, it ought to be repeated. Bear in mind, that many horses are killed by the owners getting excited, and administering large doses of different kinds of medicine. Give the above remedy time to act, and you will find it is hardly necessary to administer the second dose.

INFLAMMATION OF THE STOMACH AND BOWELS.

Many writers speak of two varieties. The symptoms are the same, and also the treatment. Inflammation is generally the termination of colic ; pulse very much quickened, but small, and often scarcely to be felt ; legs and ears cold ; belly exceedingly tender and painful to the touch ; constant pain ; sudden and great prostration ; the breathing is more hurried, and the indication of suffering more evident ; the eyes acquire a wild, haggard and unnatural stare—the pupil dilates ; his heedless and dreadful throes render approach to him quite perilous. He is an object not only of compassion, but of apprehension, and seems fast hurrying to his end, when all at once, in the midst of agonizing torments, he stands quiet as though every pain had left him, and he were going to recover. His breathing becomes tranquilized ; his pulse sinks beyond all perception ; his body becomes covered with a cold, clammy sweat ; he is in a trem-

or from head to foot, and about the legs and ears has even a death-like feel ; the mouth feels deadly chilly, the lips drop pendulous, and the eyes seem unconscious of objects, in fact, death, not recovery is at hand. Mortification has seized the inflamed parts ; pain can no longer be felt in that which a few minutes ago, was the seat of intense suffering. He again becomes convulsed, and in a few more struggles less violent than the former, he expires. The treatment of inflammation of the stomach and bowels, like that of the lungs, should be prompt and energetic. The first and most powerful means of cure will be the fever medicine—a teaspoonful turned upon the tongue every half hour, with free application of the mustard, and warm water applied to the belly and flank. It is seldom treated with success by the most skillful. Cure colic, and avoid inflammation.

BOTS.

The history and habits of the Bot is poorly understood among farmers and horsemen. In the spring months the bots pass out of the horse with the excrement. Those that are covered with ground hatch into the gad-fly in from four to six weeks. The females become impregnated, and lay their eggs within reach of the horses mouth ; in a few days the eggs are hatched. The animal, in licking the parts covered with eggs, causes the eggs to burst. The small bot attaches itself to the tongue, and is carried into the stomach with the food. There they remain attached to the stomach for one year. They then de-

tach themselves and pass out. As far as our experience goes, we have no faith in medicine to expel bots. We can, it is true, force the medicine down a horse's throat, but we cannot afterwards get it into the throat of the bot, who is placed in his own element, and can refuse the food that does not suit him. Acids that would cause the death of the animal applied to them after taken from the horse, has no effect. Therefore the wise man will leave them to themselves, as they never cause harm, and are natural to all horses.

CRIBBING, (WIND SUCKING).

The act of Cribbing, consists in grasping the crib or a given point, with one or both jaws, at the same time uttering a laryngeal sound, resembling a grunt. Many of our best veterinary authors have furnished different opinions on the subject; while one contends that, in the act the horse swallows atmospheric air, another contends that the animal ejects air, which act is accompanied by a peculiar noise created by gas generated in the stomach. I consider crib biting as discharging wind from the stomach, similar to belching in ourselves. We find the anatomical structure of the throat renders swallowing wind impossible.

CAUSES.—Indigestion, and feeding large quantities of grain when the animal is young.

TREATMENT.—Give in the feed three times a day—one teaspoonful of the following: Powdered Sulphate of Iron, Powdered Gentian, Powdered

Ginger, Powdered Hyposulphite of Soda, of each two ounces ; mix. The animal must be fed from the floor, and the manger should be removed so as to prevent the animal from having a chance of cribbing. All patent appliances have as yet failed to effect a cure.

LICE.

These parasites are the consequences natural to states of filth and debility. Insects which have been mistaken for Lice, sometimes infest large stables, and drive the horses frantic with the itching they provoke ; application after application, intended to destroy lice, is made use of. Every recognized source of contagion is exterminated. Internal, as well as external medicine is resorted to, but every endeavor to remove the annoyance signally fails. The horses are fat and fed upon the best, yet they seem to have the parasites peculiar to the opposite condition. At last some one points to the hen roost, which is either in the stable, or leans against the stable. That building is pulled down, and with it the nuisance disappears.

An application of one ounce of Carbolic Acid, dissolved in one gallon of Rain Water, and applied once a day for a few days, will destroy the Lice without producing the bad effect that tobacco and oils often do. In many cases the animal troubled with lice is hide-bound, and may have various other affections, derived from the debility which generated the parasites.

WARTS.

There are three different sorts of growth, all of which are recognized under the term "wart." When the growth proves of a fixed cartilaginous kind, with a neck, it should be removed immediately. The knife or an instrument for the purpose of removing them, is the only remedy. If removed with a knife, some bleeding will follow. This may be readily commanded by having at hand a pan of water boiling on a small fire near by. In the heated water a budding iron should be placed; on the removal of the wart the hot iron should be applied to the bleeding surface without any danger being incurred of destroying the living flesh. In a few days the parts should be touched with Caustic Potash once in two or three days. The flat wart that is found on the shoulder and fleshy part of the body, can often be removed with the fingers. The parts should then be touched once in three days with the Caustic Potash. In using the caustic, care must be taken not to apply too freely or often; after the caustic is applied the parts will turn black, and in a few days a scab can be removed.

MELANOSIS.

Gray horses, which have become paler with age, or have become white, are liable to a disease termed Melanosis. A quantity of black deposit accumulates in large quantities upon certain parts of the frame, and is often mistaken for, and called warts. There is one test for Melanosis, which is a pimple near the root of the tail; there may only be one, or they may

be found in great numbers. The enlargement can often be found on any part of the body ; it has no fixed abode. It is hard to the touch, and apparently devoid of sensibility. In this case the disease may remain for one, or it may continue stationary for six years. It often breaks and discharges a thick black liquid. The only treatment is the removal with the knife. When too numerous around the tail there is no treatment that would be of any benefit.

DISLOCATION OF THE WHIRL-BONE, OFTEN CALLED DISLOCATION OF THE STIFLE JOINT.

If we should believe all the stories that are told us of horses having their stifle out, the difficulty



would appear to occur very often, which in fact is not the case. We are often called to see horses said to have their stifle out, which, on examination, turns out to be a sprain of the limb, or an injury of the foot—often a nail is found in the

Illustration of a horse with dislocation of the whirl-bone joint.

foot.

When there is a dislocation, it is the whirl-bone joint, and not the stifle joint, as is often supposed.

The symptoms are very plain ; the limb is extended back—the animal is unable to bring it forward. (See illustration.) The proper method to bring the parts to their place is to take hold of the limb firmly, carry it back, then out and forward as far as possible, then in under the body, and let go. This will seldom fail to reduce the dislocation. The animal should be kept quiet for a few days, and the sweating liniment must be rubbed in well every morning for three mornings ; then grease well with lard the fourth morning ; the fifth day wash with warm water and soap, and dry well ; then grease, and continue until all the scurf is removed.

WATER FARCY.

This disease is known by the swelling of the legs, sheath, belly, etc. In young horses the parts are hot and painful to the touch, while in old horses there appears to be no pain on pressure, but the marks of the the fingers will remain for some time. Hand rubbing and moderate exercise are very necessary, and bathe the parts well with hot water for one hour, then rub dry. Give in the feed the tonic powders, one teaspoonful twice a day.

LOCKED JAW.

This disease is the result of injuries, such as picking up or running nails in the feet, metallic or other substances taken into and wounding the stomach or intestines. Worms are occasionally supposed to give rise to this disease. The first indication of its approach is a straggling gait of the hind legs, which

occurs about the ninth day. In a few days after the membrane, or haw of the eye will cover one-third or more of the eye-ball. Whenever the head is elevated, the muscles of the jaw becomes rigid; the tongue swollen; mouth full of saliva; nostrils dilated; nose poked out; ears erect, and respiration becomes disturbed; the animal very excitable; bowels constipated; in turning the horse, he moves without bending his neck. The first step in the treatment is to remove the patient where he will not be unnecessarily disturbed. Open the bowels with a Purge pill. This should be done on the first symptoms being observed as it is not often successful after the jaws become set. Give upon the tongue a teaspoonful of the fever medicine every hour, and apply the Mustard and Vinegar all along the spine from head to tail; keep a pail of bran slop before the animal, and put one of the Purge pills in the mouth as far up as possible. There is no danger of giving too much. Continue this until the bowels are open, and also give injection of soap and warm water to assist the operation of the medicine. When the foot has been injured by a nail, open the wound well, and apply a bran and lye poultice until a healthy action takes place.

DISEASES OF THE MOUTH.

BAGS OR WASHERS.

The bit, in reining, frequently bruises the lining membrane of the mouth, causing soft puffy swellings in the corners of the mouth. These sores sometime-

become so large as to cause some inconvenience to the animal in masticating his food. For their removal the parts should be freely lanced, and allowed to bleed undisturbed ; then bathe the parts freely with the following wash : Tincture myrrh, tincture aloes and rain water, equal parts ; mix all together. Should this not succeed, remove the swelling with a pair of scissors ; then apply the above wash two or three times a day until healed.

LAMPAS.

So long as horse owners believe "lampas" to be a disease, and men can be found to "burn it out," as it is sometimes termed, just so long will the error exist and the barbarism continue.

Lampas is a name given by writers on farriery, to a swelling or unnatural prominence of some of the lowest ridges or bars of the palate.

I should not have thought it worth while to have taken up time with this supposed malady, but that it has called forth the infliction of great torture on the animal by way of remedy ; and that it has been a cloak for the practice of much imposition on those who have been in the habit of consulting blacksmiths on the diseases of their horses. I allude to the cruelty and barbarity of burning the palates of horses so affected. Equally consistent would it be, and were it consistent, more requisite, to cauterize the palate of children who are teething, for the truth is, the palate has no more to do with the disease, (if disease it can be called), than the tail has. Lampas is neither

more nor less than a turgidity of the vessels of the palate, consequent upon that inflammatory condition of the gums, which now and then attends the process of teething.

The practice of burning out or cauterizing the palate is a stigma upon our National character, and a disgrace to the professors of veterinary science. The supposed symptoms of lampas is rubbing of the tail, which may be caused by either pin-worms, dirt collecting under the tail, or constant confinement in the stable,

ULCERS IN THE MOUTH.

In breaking horses to harness, the under jaw immediately in front of the molar teeth is so injured by the bit as to cause inflammation of the periosteum, (a thin membrane that covers the bone,) in consequence of which, pipe-like openings, called sinuses are formed, which, becoming filled with partly masticated food, soon become fæted, and often occasion sores which prove difficult to heal. When the gum is only injured, it should be carefully washed with the tincture of myrrh and aloes, equal parts. But when the bone is involved the diseased parts must be removed, and afterwards dressed with the following lotion: Gallic acid, one ounce; tincture opium, one ounce; soft water, four ounces; mix, and bathe the parts affected two or three times a day.

IRREGULAR TEETH.

In old horses the molar teeth, or grinders, frequently become very uneven upon their grinding sur-

faces, causing difficulty in masticating their food.

The outer edges of the upper molars becoming sharp, cut the cheeks, causing them to become sore, and often very much swollen. (See illustration.)



Head showing the molar teeth worn to an edge.

The remedy is the tooth-rasp, by which the sharp edges of the

teeth are taken off, enabling the animal again to masticate his food in a proper manner.

SORE MOUTH.

This is caused also, by the bearing of the bit upon tender-mouthed horses. It is situated at the corners of the mouth, often causing considerable thickening of the lips around the parts affected. Alum water should be applied to the parts three times a day, or the wash recommended for bags or washers may be applied with equal advantage.

WOLF TEETH.

Many horsemen regard these teeth as injurious to the eyes of the horse but we cannot understand upon what their opinion is based. These teeth are not supernumerary, as has been asserted by many writers, but on the contrary, are natural to all horses. The germs or pulps of these teeth are in the jaw at the time of foaling, and are developed generally at one year old, ready to cut their way through the gums.

All young animals of the equine species have these teeth, and they can be found in the mouths of four out of five colts at two years of age. It is only when the eyes are affected by disease that these teeth are looked for, and when found, are supposed by some to be the trouble. In an experience of ten years, I have not been able to discover the least connection between these teeth and the eyes, and what is equally singular, these teeth are seldom mentioned by veterinary authors. If you find them in your colts, and want them removed, the best way is to pull them out with an ordinary tooth-forceps, or they will drop out if they are let alone.

CARIES OF THE TEETH.

Horses frequently suffer from this troublesome disease. Caries or decay in the teeth, gives rise to tooth ache, the same as in man, causing symptoms in the horse which are often mistaken for other affections. When caries has existed for some time there will be, as a general thing, a fœtid discharge from one nostril; the food passes away in an undigested state; particularly is this the case when whole corn has been given; loss of flesh, stupor, staring coat, stopping short in the road when in harness, shaking the head and



Head showing a decayed tooth.

then going on again, starting as though scared, when no object of fear is about. The only remedy is removal of the tooth, which generally requires the aid of a qualified Veterinary Surgeon. (See illustration.)

BIG HEAD AND BIG JAW.

This disease has a very peculiar history. It is exclusively American. In Europe it appears to be entirely unknown. It prevails most extensively in the South and far West. It is caries or decay of of the upper jaw bone.

CAUSES.—In tracing out the causes which unite to produce big head, we find that it depends generally upon the kind of food which the horse eats.—In grass growing countries the disease is rare and, even in the infected districts, horses seldom have it if they have access to good pastures. It is the same privilege which so largely protects the young colt, in most instances. No one who has given the subject any attention, can have failed to notice that the horse well cared for and kindly treated, is much less likely to contract the disease than one ill-used. Horses exclusively fed on corn, will often contract diseases of the jaw; not only “big head,” but many other diseases.

SYMPTOMS.—In its very first stages—Big Head, may be easily detected. Any swelling of the head or upper jaw, can be seen at the first careful glance. The nasal bone, which lies in a direct line from the eye to the nose, is the one that becomes misshapen and betrays the presence of disease. The same

symptoms will be noticed in disease of one of the molar teeth of the upper jaw ; a careful examination should be made of the mouth before any treatment is applied.

TREATMENT FOR BIG HEAD,—Should be local and constitutional, or internal and external, the object of which should be to improve the general condition of the system, and change the action in the parts affected. The prospects for accomplishing this are better in the earlier stages of the disease. Yet the disease may often be overcome when it has made considerable progress.

The animal should have, for two days, soft food, then a purge pill, when it operates give the following powder :

Powdered Hyposulphite of Soda,	3 ounces,
“ Sulphate of Iron,	3 “
“ Gentian,	3 “

Mix. One teaspoonful in the feed three times a day.

The Sweating Liniment should be applied once a day, for three days, on the enlargement of the nose. The fourth day grease with lard and continue greasing until the scurf is all removed. Let at least two weeks intervene, then repeat the application of the liniment. Care must be taken that the horse does not rub his head and get the liniment in his eyes. If there is grass, let the animal out during the day. Always take the animal up during rain storms, and at night.

SIMPLE INFLAMMATION OF THE EYES.

CAUSES.—Foreign substances becoming lodged in the eye ; blows of the whip ; a severe cold : feeding corn to young colts, &c.

SYMPTOMS.—Weeping of the eye, swelling of the lid, and inability to open the eye in a bright light.

TREATMENT.—Examine the eye well to see if any foreign substance has been lodged in the eye. If so remove it. The animal should be placed in a cool shed, rather darkened. Give no corn or corn-meal while the eye is de ceased ; feed scalded shorts or bran, and apply to the eye twice a day, Laudanum, six drachms ; Tincture of Aconite, two drachms ; rain water, one pint ; mix. Bleeding in the small veins just below the eye is of great benefit. Placing food on the ground, so as to get the head down, will cause the veins to fill, and they can be easily found ; by opening them they will bleed freely while the head is kept kown. If no relief, give a purge pill, and continue the eye wash.

CHRONIC OPHTHALMIA, OR MOON-EYES.

The eyelids are seldom swollen ; the eye-ball only seems to be involved. This is the second stage of inflammation of the eye. The milky appearance of the eye shows that there is inflammation in the lens of the eye. There will be periods of relief in this disease, hence it is often called moon-blindness.

TREATMENT.—The same as simple inflammation. Give a purge pill, use the eye wash, and place a seton just back of the eye, between the eye and the ear.

Give, in the feed, one teaspoonful twice a day, of the following mixture ; Powdered Colchicum Seed, two ounces ; Powdered Saltpetre, one ounce. Mix.

DISTEMPER.

This is a very common disease in the western country, and highly contagious. The term, however, is used by all horsemen to denote all classes of catarrhal affections, a common cold, influenza, bronchitis, etc., are all included under the above heading. We are not disposed, however, to believe that the term distemper covers so broad a field. When you find your horse having the distemper bathe the throat well twice a day with the mustard paste, and give the cough powders, one teaspoonful morning and evening. Do not allow the horse to get wet. When the swelling under the jaw becomes soft, lance it ; sometimes it is necessary to lance on both sides.—Feed soft food.

SORE THROAT.

This is usually an accompaniment of a catarrhal affection. It sometimes occurs independent of any such disease ; it is then known as Laryngitis.

SYMPTOMS.—Stiffness of the neck, cough, difficulty in swallowing, mouth full of saliva, with more or less fever.

TREATMENT.—The same as for Distemper. Bathe the throat with the Mustard paste, and give the Cough powders.

CATARRHAL FEVER.

This is a very common disease, but it appears that horsemen are ignorant of its nature. It is simply a severe cold and usually follows exposure to cold drafts of air after a hard drive.

The symptoms are not uniform, usually the animal will be dull and stupid, refuse all kinds of food, but will drink often. The pulse varies from sixty to ninety per minute. There is a hollow and very distressing cough. There is sometimes great prostration, manifested by a staggering gait. It generally produces great debility.

TREATMENT.—Give upon the tongue every evening one drachm of Dover powder and give morning and noon one teaspoonful of the fever medicine until the frequency of the pulse is reduced to its natural condition. To allay the cough give the Cough powders two or three times daily, and apply mustard to the throat the same as recommended for distemper. After the symptoms are abated, if there is debility, give tonics such as the Tonic powders.

NASAL GLEET.

This is usually the result of neglected catarrh. It is attended with a chronic discharge, from one or both nostrils, of a thin white mucus. The animal's health is usually good, feeding and working as if in perfect health.

TREATMENT.—The only treatment which has proved successful has been on the tonic principle. Give the Tonic powders night and morning. Take

Glycerine, two ounces ; Carbolic acid, one-half ounce ; Rain water, one quart. Mix, and swab the nostrils. For a swab take a piece of whale-bone fourteen inches long, tie a small piece of sponge over the end, being sure the end is well protected. This will make a good swab.

CATARRHAL INFLUENZA.

Influenza is a catarrhal complaint, accompanied by a low grade of fever, assuming at different seasons different types. It belongs to an important class of complaints known as epizootic. It extended over the United States in the year 1873 and attacked in a similar manner a great number of animals. In these complaints there is a great tendency to assume the typhoid form, and they withstand badly all depletive treatment. They depend upon some general cause, as yet unknown, but which it has been usually thought sufficient to term "atmospheric," but are almost most common among animals breathing impure air, densely crowded, badly fed, or exposed to cold winds, and are generally robbed of their violence by guarding against such debilitating causes and maintaining a high standard of general health.

SYMPTOMS.—The earliest and most prominent symptom is weakness, soon followed by loss of appetite, shivering, a dry, staring coat, a dull, sickly appearance, a quick, weak pulse, and an occasional short cough with discharges from the nostrils.

TREATMENT.—Rub the throat well with the Mustard paste and give internally one teaspoonful of

the following three times a day on the tongue : Fluid Extract of Belladonna, two ounces ; Tincture of Acconite Root, one-half ounce. Mix. When the horse will eat give one teaspoonful of the Tonic Powder on the food three times a day, and if the animal is able give moderate exercise once or twice a day.

CHRONIC COUGH.

By this term is understood a cough that comes on without any fever or evidence of the horse having taken cold.

TREATMENT.—Spirits of Turpentine, two ounces ; Mucilage Acacia, six ounces ; Gum Ammoniacum, one-half ounce ; Laudanum, four ounces ; Water, two quarts. Mix, and give, after shaking, one-half pint as a drench every night ; or use the Cough powders, one teaspoonful three times a day.

HEAVES OR BROKEN WIND.

This disease is so well known that it does not require any special remark. It is often the result of a badly treated case of distemper or catarrhal disease, and is of the same nature as the asthma affecting the human species. By placing the ear to the throat a rattling sound can be distinctly heard, which proves that there is an obstruction in the air passages. A number of remedies have been recommended, but all are only palliatives.

TREATMENT.—Feed no hay ; give straw instead. Give the remedy recommended for chronic cough. By this treatment a great improvement can be made.

One pint of warm lard with half an ounce of strong Camphorated Spirits, will relieve the animal for a few days. Balsam of Fir, four ounces ; Balsam Copaiva, four ounces ; Calcined Magnesia, sufficient to make eight pills. Give one night and morning. This is said to be a sure cure.

INFLAMMATION OF THE LUNGS.

This disease occurs in the Spring and Fall, and is known to horsemen as Lung Fever.

SYMPTOMS.—Pulse quick and full ; mouth hot ; the animal hangs his head in or under the manger ; legs and ears cold ; appetite lost ; breathing quick ; on applying the ear to the side a crackling sound is heard.

This disease requires prompt treatment, as it frequently terminates in pleuro pneumonia. Give one teaspoonful of the fever medicine on the tongue every half hour until four or five doses are given, then give every two hours. The legs should be well hand rubbed and bandaged with flannel bandages ; rub the sides of the chest with Mustard and Vinegar, well mixed. Keep the horse where there is plenty of fresh air. Do not load the animal with blankets ; one is all that is required. Avoid all noise ; keep the animal quiet. A bucket of cold water should be kept within reach of the animal's head until recovery.

The symptoms of recovery are : The horse will lie down at night the legs will become warm ; appetite improved. The Tonic Powders should be given, one teaspoonful three times a day for one week. If

the bowels are very costive give injections of warm water, with a little soap and salt. In twelve to fourteen hours, if the animal is not properly treated, the pleura will become involved. It is then called

PLEURO-PNEUMONIA.

Involving the lining membrane of the chest or covering of the lungs, as well as the tissue of the lung itself. The symptoms are the same as Lung Fever, with pawing, looking at the sides; pain on pressure over the ribs, a peculiar grunt when the horse is backed or turned around.

The same treatment as in inflammation of the lungs is called for. If not properly treated it will terminate in

HYDROTHORAX OR DROPSY OF THE CHEST.

This is the third and last stage of lung fever, and always terminates in death. The symptoms are, swelling of the hind legs and under the belly, mouth cold; by placing the ear to the chest a splashing can be heard as if the lungs were moving in water.—There is no treatment—death will relieve the animal in a short time.

BRONCHITIS.

This is an inflammation of the mucus lining of the bronchial tubes, and, although occasionally existing as a separate disease, is more commonly associated with diseases of the lungs.

SYMPTOMS.—Tenderness of the throat, a short, painful cough, breathing quick; a short, quick pulse; a rattling sound which is easily heard when the ear

is applied to the lower part of the neck or side of the chest.

TREATMENT.—A comfortable, well littered, loose box or shed with plenty of cool fresh air, are the first essentials in the treatment of bronchitis, and indeed of all chest diseases. I have repeatedly seen a sick horse's pulse fall eight or ten beats per minute in the course of an hour after being put in a cool shed or box stall.

Without fresh air all medical treatment is comparatively valueless. Give one teaspoonful of the fever medicine every hour until four doses are given, then every three hours; the mustard and vinegar should be applied from the jaws to the breast, the legs well hand-rubbed and bandaged, and a light blanket kept on the horse. If the weakness increases give one ounce each of Sweet Spirits of Nitre and Aromatic Spirits of Ammonia in half a pint of cold water three times a day.

THUMPS—SPASMS OF THE DIAPHRAGM.

This is generally provoked by the heedlessness of the rider or driver.

SYMPTOMS.—Distress, and a strange noise heard from the center of the horse.

TREATMENT.—Give, as soon as possible, Sulphuric Ether, two ounces; Laudanum, one ounce; Tincture of Camphor, one-half ounce; Cold Water, one pint. Repeat every quarter of an hour until four doses are given, or the horse recovers. Hand-

rub and bandage the legs, and sponge the head and nostrils with cold water.

INFLAMMATION OF THE KIDNEYS.

It usually results from the eating of musty, damp or heated hay ; from hard water, to which the horse is unaccustomed ; occasionally from large doses of diuretic medicine, and strains of the muscles of the back or loins. The horse is feverish, his pulse quick, often reaching 100 ; he strains, straddles in his gait, and voids high colored, and sometimes bloody urine.

TREATMENT.—Give twice a day, as a drench, fluid extract of Buchu, one-half ounce ; Balsam of Copevia, one drachm ; water, one-half pint. Apply the Mustard and vinegar over the kidneys.

This remedy should be given in all diseases of the urinary organs.

If the pulse is excited, give a teaspoonful of the Fever Medicine every two hours ; also place a fresh sheepskin (with the newly-flayed surface down,) over the loins, replacing it if possible every six hours. warm clothing to other parts of the body ; friction and bandages to the legs ; a mash diet, and two ounces of Bicarbonate of Soda, to be stirred in the water he drinks.

RETENTION OF THE URINE.

This is often caused by the irritation of the neck of the bladder, or a dislike to splatter the legs. Shake up the litter under the animal and they will often urinate freely, unless the retention is the result of disease.

SYMPTOMS.—Are much the same as colic ; pawing, lying down, with constant efforts to urinate, without being able to void urine.

TREATMENT.—First empty the bladder. This will give immediate relief. Introduce the hand up the rectum, having the hand well greased with lard ; the bladder lying immediately under the rectum, there will be no trouble in finding it. If the bladder is filled with the urine, press down upon it gently, and if there is only inflammation of the neck of the bladder the urine will flow freely. If there is calculi or a stone lodged in the parts, an operation must be performed for the removal of the stone. This will require the assistance of a competent veterinary surgeon. When the bladder is emptied, give Fluid Extract of Buchu, one-half ounce ; Balsam of Copaiva, two drachms ; mix in half pint of water, and give as a drench. Repeat twice a day if necessary.

INFLAMMATION OF THE BLADDER.

Colds, irritating substances or foreign bodies in the bladder.

SYMPTOMS.—Pawing, lying down, pointing with the nose well back in the flank. The animal will seldom roll as in colic. Pulse full and strong. Urinating often but little at a time. The urine has a very dark color.

TREATMENT.—Apply Mustard mixed with warm water over the flanks ; give sweet Spirits of Nitre, one and a half ounces ; Extract of Hyoscyamus, (Henbane), two drachms ; Laudanum, one-half

ounce ; Cold Water, half pint. Mix. Give as a drench twice a day.

DIABETES OR PROFUSE STALING.

This disease occurs especially during the hot weather, when horses naturally drink most, and among hard-working subjects.

CAUSES.—The same as inflammation of the kidneys; and drinking when hot and exhausted.

SYMPTOMS—Thirst the principal one, being almost unquenchable. The urine is very abundant; it is clear and colorless. The horse falls off in condition, his coat is rough and staring; his appetite, at first voracious, fails, and the disease, if not checked, often leads to various constitutional diseases.

TREATMENT.—Give twice a day as a drench the following mixture: Iodide of Potassium, one drachm; Iodine, one scruple; Carbonate of Soda, four drachms; Warm Water, one-half pint. Mix.

CALCULI, OR STONE IN THE BLADDER.

A horse may have these deposits in the bladder long time before they occasion any very serious disturbance in the system.

SYMPTOMS.—Frequent efforts to stale, but voiding the urine in very small quantities at a time, which is usually of a turbid yellow, or thick, whitish color; colicky pains are often observed—the animal kicks its belly, paws, looks at its sides, and on changing its position, frequently gets relief.

TREATMENT.—Give twice a day one drachm of

Muriatic Acid in a pail of water. Should this fail to give relief, an operation must be performed for the removal of the stone. This will require the assistance of a competent veterinary surgeon.

HIDE BOUND.

This is often caused by some slight disturbance in the system, occasionally from the action of worms, without producing any marked symptoms of disease. In all such cases the Tonic Powder is to be used. If the animal is not weak, give Barbadoes Aloes, one ounce; Gentian, one drachm; Ginger, one drachm, with molasses sufficient for a pill. A run at grass is of great benefit.

MANGE.

This disease is identical with that of itch in man. It is caused by a very minute insect, called *acari equas*. The skin about the neck becomes parched; the hair comes off in spots, causing scabby patches; there is an intolerable itching, causing the animal to be almost constantly rubbing itself against a post, tree, etc.

TREATMENT.—Select a clear, warm day; place the animal in the sun, and with a scrubbing-brush wash or scrub him all over with Castile Soap and water. When dry, take one quart of Sweet Oil and two ounces of Coal Oil. Mix well together; wet a brush with the oil, and rub him all over. It does not require to be put on very thick; in fact, it is better not to be so.

SURFEIT.

This disease considerably resembles the Nettle-rash in children, and, like it, usually proceeds from derangement of the digestive organs. Sudden changes of food and copious draughts of water sometimes produce it; but it often comes on suddenly and without any obvious cause, is most common in Spring and Autumn, and occasionally becomes epizootic. Tumors about the size of small beans, and containing a watery fluid suddenly appear over the body or limbs, sometimes causes much itching, but, unlike many other skin affections, are not contagious.

TREATMENT.—Give a Purge Pill, then feed the Condition Powders—a tablespoonful twice a day, or powdered Hyposulphite of Soda, a teaspoonful three times a day.

JAUNDICE, OR YELLOW WATER.

This disease is known by a yellowish appearance of the skin, which is caused by the bile not being carried off from the liver in the natural way; but, it is taken into the blood, and spread through the whole system. This yellowness can only be seen where the skin is not covered with hair; but every part of the skin, fat, flesh, and every part through which the blood flows, if it could be examined, would be found tinged with the yellowness of the bile.

SYMPTOMS.—The first symptoms that will likely be noticed are yellowness around the mouth, nose and eyes, and of the urine or water. These symptoms will show the case to be one of jaundice. But, be-

fore these symptoms are observed, other appearances of illness may have been noticed ; such as being lazy or sluggish in his movements, and drooping the head when standing. As the disease progresses, the horse loses his strength, hangs his head, his eyelids close, and his spirits decrease generally ; he reels when walking and may even fall ; his breathing is affected, and his pulse increases in frequency, the bowels are costive, the dung hard, and covered with a yellow mucus. The urine through the whole course of the disease is scant and yellow.

TREATMENT.—Give a pill of Barbadoes Aloes, six drachms ; Calomel, one drachm ; mix with a little water. If the horse is not relieved, repeat in ten days.

DIARRHŒA

This disease is sometimes caused by the too free use of cathartic medicines, change of water, exposure to cold, etc.

TREATMENT.—Give one teaspoonful of the Fever Medicine every two hours, until four doses are given ; then give Pulverized Opium, one scruple ; Pulverized Gentian Root, one drachm ; Ginger, one drachm ; mix. Give every six hours until relieved.

WORMS.

All animals are subject to these parasites, and thousands of animals are annually lost without the cause being suspected.

SYMPTOMS.—Staring coat, haggard eye, colicky pains, gasping, debility, sluggish movements ; skin

covered with scurfy blotches ; small, feeble pulse ; belly tucked up ; breathing slow ; a peculiar, pallid appearance of the membrane lining the mouth ; irregular appetite ; badly digested fæces ; agitation of the heart ; dung covered with a mucus substance ; a whitish or yellowish white substance about the fundament ; rubbing the tail, etc. These symptoms do not all appear in the same animals.

TREATMENT.—Use the Worm Powders—the best remedy known for worms. Give one teaspoonful twice a day, for four or six days, in bran ; scald the bran, if possible ; then give one of the Purge Pills.

POLL EVIL.

This disease occurs in horses only when the blood is in a morbid condition. Causes, a bruise on the top of the head from a low doorway, pulling on the halter, or a blow of a whip, &c.

SYMPTOMS.—Swelling of the parts with heat and great tenderness which will remain for weeks, sometimes months, before it breaks.

TREATMENT.—A Purge Pill should be given immediately. Bathe the parts with the Veterinary Liniment twice a day until all fever is removed. If the swelling is not entirely removed, use the Sweating Liniment once a day for three days ; this will either bring it to a head or remove the swelling entirely. Should matter form, the parts should be well laid open with the knife, so that the matter will run out as fast as it forms. A syringe should be used to

clean the parts out well with castile soap and rain water; then dress the parts with Glycerine, four ounces; Carbolic Acid, one ounce; mix, and apply once a day.

A NEW REMEDY FOR FISTULA AND POLL EVIL.

It is claimed that this remedy will cure without the use of the knife. It is worth a trial, at least, with those who cannot use the knife. Make a strong decoction from about a gallon of May-apple roots.—Take a gallon of the roots and add water sufficient to cover them, boil until you obtain a thick syrup—taking care not to burn it. While still boiling, add one-fourth as much old bacon or lard as you have syrup, remembering to stir all the time; remove from the fire and preserve for use.

USE.—This liniment is used in cases of ulcers and tumors where matter has formed. It is an excellent remedy for Fistula and Poll Evil in their second stage; that is, when suppuration or festering has set in. It is slow in its action, but very certain if properly used. The use of this liniment will produce effects really astonishing to one who has never before witnessed it.

APPLICATION.—A thin coating of this should be spread over the whole surface of the tumor each morning, and carefully washed off at night, after which any old grease that may be at hand should be well rubbed on. This treatment should be continued for three or four days, or until matter forms in the lit-

the fissures of the crusted skin. When the pus begins to ooze out freely, the liniment may be gradually increased in quantity, and allowed to remain as long as a day and a night, but never more than this. At the end of another twenty-four hours it may again be applied freely. It must always be washed off thoroughly before the grease is rubbed on with a cloth and warm, strong soap-suds. At first it occasions a severe burning and itching, so that the horse will require careful fastening to prevent him from rubbing it off. After suppuration has once fairly begun, however, he will stand in one place for hours together, apparently in the enjoyment of great relief.

FISTULA OF THE WITHERS.

This disease is precisely similar to Poll Evil, its location only giving it a different name; it occurs more frequently than Poll Evil, arises from the same causes, and requires the same treatment.

STOMACH STAGGERS.

This is the result of an overloaded stomach pressing upon the heart and lungs; it is caused by keeping a horse that is a hearty feeder up without any exercise, and feeding all the hay and dry feed that it will eat.

SYMPTOMS.—The animal appears dull and stupid, with a tendency to push forward, unless supported by a wall, manger, tree or other object; constipation of the bowels accompanies this disease. In the second stage the horse is constantly asleep and it is then termed *sleepy staggers*; it will require considerable

noise and pulling to get the animal to wake up ; they will often take a mouthful of hay and attempt to eat but will all at once fall asleep with the hay in the mouth.

TREATMENT.—A Purge Pill should be given immediately ; a pint of Linseed Oil with twenty drops of Croton Oil given immediately after ; rub and bandage the legs ; rub the entire body ; give injections of warm Soap Suds and a handful of salt ; keep the animal moving around. If no relief, the disease will often terminate in inflammation of the brain or what is known as *mad staggers*. The animal now becomes indifferent to all about him ; plunges about, destroying everything in his way that will yield to his struggles. There is no treatment ; death will soon relieve the animal.

BROKEN OR THICK WIND.

Regarding the nature of the disease, thick wind, which, however, is a very funny name for a pathological condition of this character, it is a diseased condition of the respiration, generally located in the nasal cavity, sometimes affecting stallions with thick necks, often discovered after an attack of distemper, or throat disease, and scarcely affecting the general health of the animal ; is often caused by contraction of the cartilages of the nose.

Relief can frequently be obtained by inserting a small sponge wet with water, up the nose ; Pressing it up towards the top of the nose. If properly ap-

plied, and not shoved too far up, it will enlarge the opening of the nostril so that the air can escape without the rattling noise. In stallions frequent blanket sweats around the neck will be of great benefit, and often give relief.

CHOKING.

Choking very rarely occurs in horses, very frequently in cattle. If choking should occur in the horse there is very little chance or hope of saving his life if not attended to immediately. If a ball or other substance stick in the passage to the stomach, and it has passed down some distance, it is called low choke, and is not so dangerous as if it sticks in the entrance to the gullet—high choke.

TREATMENT.—Move the animal sharply; if no relief, cause him to jump over some obstruction. If this fails, pour a little cold water in one of the ears. This I have often tried, and met with success in many cases. If no relief press down with the hand over the substance in the gullet, and try to move it. Do this not too strongly, but continue it for a time. Administer one pint of linseed oil, melted lard, or syrup of any kind. If these should fail after a good trial then have the gullet opened right over the substance and take it out, and put in two or three stitches with strong saddlers' silk. Remember the anatomical structure of the horses' and cattle's throat is different; we dare not attempt to introduce a prob or whip handle in the horse's throat.

DEBILITY.

This is a condition accompanying many diseases—hence the necessity of guarding against any measure in the treatment, even in the disease of an exalted kind, that will reduce the strength. The animal thus affected rapidly becomes weak and debilitated to such an extent that it may cost his life.

SYMPTOMS.—Swelling of the legs, sheath, breast and belly; distended breathing; the horse is very weak, and easily pushed off the feet by the hand. Indeed, he staggers as he walks, and sometimes falls to the ground.

CAUSES.—Bleeding or giving physic (a purge) when the animal is already weak, and especially in diseases of the chest; starving and low diet given to a sick horse, when he should be supported in the midst of his sickness by good feeding. The very neglect, or want of knowledge on this point has killed thousands of horses that would have lived; that have been sacrificed at the shrine of ignorance, error and bad judgement. This condition of things in relation to the treatment of the horse, and indeed of all our faithful animals, may be ascribed to the diligence and persistence of our American publishers deluging the country with reprints that should never have been written.

TREATMENT.—Give plenty of good feed to the maltreated animal, and give the following blood-making medicine: Powdered Sulphate of Iron, three ounces; Gentian Root, three ounces. Mix, and di-

vide into twenty-four powders, and give one powder night and morning. If there is much swelling about the body, add five grains of powdered Spanish Fly to the evening powder for a few nights only. Be assured the animal is fully restored before put to hard work.

BROKEN KNEES.

When a horse stumbles and falls upon his knees, and takes the hair and some of the skin off, this is called broken Knees.

TREATMENT.—Wash and cleans the parts from sand and dirt, and if the skin is ragged and torn clip off with a good pair of scissors. After this is done ascertain if there is any discharge from the sore, of an oily substance, and if so get a smooth piece of iron, immerse it for ten minutes in boiling water, and apply it to the edges of the wound, so as to cause the parts to swell, and prevent the escape of the joint oil; for if this be allowed to escape irritation and inflammation will set in, and either destroy the life of the horse, or make an anchylosed or stiff joint. This is an important point to be observed, and that very early in all cases of broken knees, or open joints, wherever situated. After the hot iron has been applied, use the following wash twice a day. Sulphate of Zinc, half ounce; Rain Water, one quart. Mix. This will heal the sore and prevent proud flesh from growing. This wash will answer for the more simple wound of the knee, and where there is no open joint. Do not apply bandages, as they will cause the

whole leg to inflame and swell. Sometimes a kind of pouch will be formed by the lower edge of the wound, holding whatever pus or other fluid which may escape. This pouch should be opened at its lowest bottom so as to let the fluids out, and to prevent a bulge or permanent swelling remaining after the knees had otherwise healed. By attention to this very little or no blemish or scar will be left to tell the tale of a stumbling horse, or a bad horseman.

DISEASES OF THE EAR.

Sometimes tumors of various shapes and sizes are seen in the ear of the horse, producing a kind of canker in that organ.

SYMPTOMS.—Shaking of the head ; will not let much familiarity be made with it ; running or starting back when the collar is being taken over the ears.

CAUSES.—Irritation and inflammation of the skin of the ear, producing small pimples of proud flesh.

TREATMENT.—Remove with the knife, scissors, or caustic ; then apply the Simple Ointment, as for simple sores.

DISEASES OF THE HEART.

Of diseases of the heart little need be said, and as little can be done in the way of cure ; so all I propose under this head is merely to name a few of the altered conditions of the heart, which are all embraced in the sweeping term "Heart Disease."

1. Enlargement of the heart.
2. Wasting or shrinking of the heart.

3. Foreign bodies in the heart.
4. Fatty degeneration of the heart.
5. Inflammation of the heart.
6. Ossification of the heart.

Such, then, are some of the distinctions made, when speaking of diseases of the heart. For which there is no treatment.

SPRAINS.

By this term is meant partial displacement ; the twisting of a joint with more or less injury to the articulations, ligaments, tendons and their sheaths. At times small portions of the bones of the joint are separated. Indeed, every variety and degree of severity is to be seen in sprains of different parts. Every joint is liable to sprain, but the usual or more common sprains will be found in the pastern or fetlock joint, shoulder and its joints, hock, stifle, back and loins, flexor tendon, suspensory ligaments, etc., produced by a common cause, such as slipping, falling, overwork, the weight of the body. and not unfrequently the load falling upon a part, when not in its proper position for receiving it.

TREATMENT.—Absolute and entire rest, is the principal point to be attended to in the cure of sprains, for a sprain cannot be cured without rest, no matter what other remedies are employed ; and, if there be much fever and excitement about the horse, a few doses of Aconite will have to be given. Tincture of Aconite Root, fifteen drops, given three times a day for a few days, will remove fever and ir-

ritation. Then apply warm water with cloths for a few days, followed by cold water with cloths, the same length of time, taking the cloths off at night. It is necessary that the water must be poured on the cloths every hour, or before the warm ones become cold, and the cold ones become warm. After which the lameness and swelling will have ceased; or should this not cure the case, apply for a few days, once a day, the following liniment: Creosote, one ounce; Oil of Turpentine, one ounce; Oil of Olives, two ounces. Mix. Be sure the horse is quite well before he is put to work again.

ROWELS.

An old-fashioned operation, consisting in an opening made through the skin for a few inches in length, the skin being raised from its attachments, and a piece of leather fitting the cavity placed into it, so that a discharge is set up in a day or two.—Times were when this unnecessary cruelty was frequently inflicted upon the poor unoffending horse, but in this humane and progressive age, we only occasionally meet with the barbarity. Rowels are an abomination, and inflict a scar or blemish which never leaves the part. The stupidity and ignorance of horse doctors generally, do not allow them to see that the powers of nature are more potent for good in curing the affection than a rowel, to which is attributed a power or virtue it never possesses.

SETONS.

A piece of tape placed under the skin by means

of a needle, made for the purpose. Setons are rarely of use, and are often torn violently out, making an ugly sore.

CHILL.

The term means a shiver, as if the horse was cold. This is the way many diseases and fevers are ushered in. If the chill be checked soon, it will stop, in many cases, the disease that was forming. For this purpose give twenty drops of Tincture of Acnite Root, in a wine glass full of water ; give as a drench ; cover the body with a blanket and rub the legs to bring the circulation to the surface of the body, and all will be well.

SPRING HALT.

We need give no description of the action or peculiar gait of a horse said to have spring halt ; the greatest novice easily detects it, and seldom fails to make objections to purchase an animal thus affected. Like cribbing, we seldom know anything of the origin and progress of these cases, although we have remedies that will palliate, and often cure.

It is caused by a severe strain or want of exercise, the circulation of the blood being very slow and feeble ; there is a loss of moisture : a fluid which is commonly called joint water.

TREATMENT.—Bandage the legs with flannel bandages, while the animal is in the stable, or make a small hole through the hide between the stifle and the hip joint, and introduce a quill and blow air underneath the skin, force the air to the foot, and hand-

rub well. This has often effected a cure, but we don't claim it will cure all cases of spring halt.

RUPTURE.

The protrusion of some portion of the bowels or intestines out of their proper place. The groin, the navel, sides of the belly and scrotum, or testicle bag, are the places where ruptures usually show themselves, and it is the variety of situation that gives rise to many species of ruptures, or hernia.

INGUINAL, OR SCROTAL RUPTURE.

When this kind of rupture takes place, it is in stallions and uncastrated colts, and requires for its cure the castration of the horse or colt by what is called the covered operation, that is, by leaving the Tunica Vaginalis, or inner covering of the testes, entire and uncut, and placing the clamps over it, allowing the testes or stones to fall off, or be removed in two days from the time of the operation. As soon as this kind of rupture is discovered, have the horse or colt castrated at once.

CONGENITAL RUPTURE.

This is a species of rupture observed at the birth of the foal or colt, and is the least dangerous of all the varieties of ruptures, although the rupture continues to grow and increase in size until the fourth to the sixth month of the colt's age, and then gradually disappears altogether.

TREATMENT.—The only way to reduce such a rupture is, gather the loose skin over the rupture, and

tie a strong waxed twine around it after the bowel has been pushed into its place ; in time the part will slough off that has been tied up, and the parts will be healed up. This treatment will answer in all small ruptures.

GENERAL REMARKS.

The termination of ruptures of all kinds or varieties most to be dreaded is that condition known as strangulation, which occurrence is indicated by the pawing, rolling, sweating and restive condition of the horse, etc. If not relieved in a very short time he will die. To reduce strangulation he must be secured and fastened ; and all conceivable ingenuity must be exercised to get the bowels back into their proper place. No rule can be laid down to accomplish this, as some ruptures are reducible, and others are not. But the hands of the operator must be well oiled when handling the bowels, and the bowels kept scrupulously clean, and when they have been successfully placed into their proper cavity, the horse will be at rest and relieved from pain. To prevent the bowels from returning again the rupture must be closed by skewers made of iron or stiff wood, passed through the lips of each side of the wound, half an inch from the edge, with waxed cord wound round and over the skewers in the form of a figure 8. It is best, if possible to secure the services of a competent Veterinary surgeon in cases of this kind.

WOUNDS.

A lacerated wound is generally accompanied by

contusion, but with little bleeding. Shock of the system is the worst of its primary effects. The danger springs from collapse. A slough may probably follow. The slough is dangerous in proportion as it is tardy. The animal may bleed to death if the body is much debilitated.

TREATMENT.—Attend first to the system.—If there is great pain, give a drink composed of sulphuric Ether and Laudanum, of each one ounce ; Water half pint. Repeat in one hour if necessary, or until the shivering has ceased. A poultice made of bran and weak lye may be applied for a short time. When slough has fallen apply as a wash, Chloride of Zinc, one grain, to the ounce of water.

An incised wound produces little shock. The danger is immediate, as the animal may bleed to death.

TREATMENT.—Do not move the animal. Dash the part with cold water, or direct upon the bleeding surface a current of wind from a bellows. When the bleeding has ceased, and the surfaces are sticky, draw the edges together with divided sutures. When the sutures begin to drag cut them. After copious suppuration has been established, bathe the parts frequently with the solution of Chloride of Zinc.

A punctured wound is dangerous, as the parts injured are liable to motion. On this account, those above the stifle are very hazardous, because the small hole in the skin generally bears no proportion to the internal injury.

TREATMENT.—Always enlarge the external opening to afford egress to all sloughs and pus. Regulate the food by the symptoms, and use the Chloride of Zinc lotion.

CARE OF MARES WITH FOAL.

A mare should never be worked in a circle, or horse power when with foal, as experience has taught us that it displaces the colt. The mare should be well cared for ; give her plenty of exercise, but not hard or fast work ; a large shed should be prepared in time for the mare. When she shows symptoms of foaling she should be placed in the shed entirely alone, and in most cases will get along without assistance. Should the mare need help, do not apply to all your neighbors, as often strangers in and around the stable, will excite the mare so that nothing can be done for her. Do not permit different ones to make an examination, as they are sure to take hold of the first part that the hand comes in contact with, and draw the colt into the pelvis bones, where it becomes wedged so that it is impossible to get it back, to bring the head or front legs up. The front legs should be first found, then the head, then by gentle pulling when the mare strains, and taking time, the colt can be got away without injuring the mare. If the colt has to be cut, or taken to pieces, a knife made for that purpose, as shown in the lectures, should only be used, and no other. The reader is referred to the article on calving in the cattle department.

A mare should not be worked until two weeks

after foaling, as there are large blood vessels that have to make a change. Do not take the colt with the mare when long drives are being made, as the ligaments, tendons and bones all being very tender, blemishes are often produced.

FORMULÆ, OR RECIPES, AS RECOMMENDED IN THE BOOK, FOR THE VARIOUS DISEASES OF HORSES.

PURGE.

Barbadoes Aloes, one ounce ;
Ginger and Gentian, of each, one drachm.

Mix with warm water to form two pills, each about two inches in length. It is much easier to administer it in two pills than in one. (The above is a full dose for a large horse.)

MODE OF ADMINISTERING PILLS.—The horse should be backed into the stall, the tongue drawn gently out with the left hand on the off side of the mouth, and then fixed by pressing the fingers against the side of the lower jaw. The pill being now taken between the tips of the finger of the right hand, must be passed rapidly up the mouth until it reaches the root of the tongue ; it must then be delivered with a slight jerk, withdraw the hand and release the tongue. A slight tap under the chin may then be given, or a drink of water to assist in carrying it down. The pill also can be administered on the point of a stick, which will be more safe for the inexperienced, as there will then be no danger of the hand being injured by the teeth.

TONIC POWDERS.

Powdered Sulphate of Iron ;
" Gentian ;
" Saltpetre, of each two ounces ;
Linseed meal, four ounces.

Mix. Give one teaspoonful on the feed three times a day. When the animal will not eat, the meal should be left out and one-fourth of a teaspoonful turned well back on the tongue three times a day.

This powder should be given when there is loss of appetite, indigestion, yellow water, and when the animal is recovering from an attack of throat or lung disease, colic, &c. It is one of the most powerful mineral tonics now in use.

COUGH POWDERS.

Powdered Digitalis ;
" Squills ;
" Sulphate of Copper ;
" Saltpetre, of each half ounce ;
" Gum Camphor, one-quarter ounce ;
Linseed Meal, four ounces.

Mix. Dose one teaspoonful to be mixed in soft feed three times a day. But when the animal will not eat, the meal should be left out and one-fourth of a teaspoonful turned upon the tongue three times a day.

• Feed but little hay, and that should be dampened, while giving the Cough Powders. There is no better remedy for cough and all diseases of the throat.

CLEANSING OR CONDITION POWDERS.

Powdered Sulphate of Iron ;
" Black Antimony ;
Sulphur ;
Jamaica Ginger ;
Saltpetre, of each two ounces ;
Linseed Meal, six ounces.

Mix. Dose one tablespoonful to be mixed with soft feed twice a day.

The above powders are for swelled legs, grease, foul humors, hide bound, mange, surfeit, old coughs, and to render the coat fine. Too free use of the powders may prove injurious to mares with foal.

WORM POWDERS.

Powdered Nux Vomica, two ounces ;
" Saltpetre, one ounce ;
Linseed Meal, four ounces.

Mix. Dose one teaspoonful three times a day in soft feed for six or eight days ; then if the passages are soft give half a Purge Pill. But if hard and dry give a full dose. (See Purge Pill). The above powders are a powerful tonic and will improve the condition of the animal in all cases where a tonic is required.

FEVER MEDICINE.

Tincture of Aconite Root ;
" Belladonna, of each one ounce ;
Water, one ounce.

Mix. Dose one teaspoonful turned on the tongue every hour until three or four doses are given ; then three times a day.

This medicine is recommended for all fevers.—The effects of Aconite : it is one of the most powerful, certain and successful sedatives which can be used. It has done away with bleeding, blistering and physicking, which were formerly thought proper agents wherewith to combat and cure disease. It is not only a sedative, but it is a carminative, anodyne, stimulant and diaphoretic. It controls fever and allays pain and inflammation ; and is the only medicine, excepting Hellebore, which can excite the horse to vomit. Although the animal can not vomit it is the one to cause him to make the effort. Nothing controls the circulation and action of the heart so promptly as Aconite. The nervous centers of the body are no less ready to obey its action. Hence, its value in allaying fever, irritation, excitement and pain, from whatever cause.

How to USE IT.—Aconite should never be carried too far, or prostration and weakness will follow. When given every hour, never give more than four doses ; then give every three or four hours. In inflammation of the lungs, pleuro-pneumonia and other diseases, the Tonic Powders, or mineral acids, should follow Aconite.

EYE MEDICINE.

Tincture of Opium, six drachms ;
“ Aconite Root, two drachms ;
Rain Water, one pint.

Mix. This remedy, in connection with the treatment recommended in the diseases of the eye, is

much better than many of the remedies generally used, as it can be used without producing pain, as is caused by blowing the various remedies in the eye, which is not only injurious to that organ, but it is difficult to handle the head of the animal afterwards.

LINIMENTS OR EMBROCATIONS.

These are for external applications, and are used in the cure of sprains, bruises, chronic swellings, etc.

SWEATING LINIMENT. (FOR A BLISTER.)

Powdered Corrosive Sublimate ;
Gum Camphor ;
Alcohol, of each one ounce ;
Turpentine, one-half pint.

Grind the Sublimate fine in the mortar, then add the Alcohol ; shake well ; then add the Camphor and Turpentine. In two days it will be fit for use.

The value of this liniment depends greatly upon the fineness to which the Corrosive Sublimate is pulverized. It is used for all deep-seated injuries, as Ringbone, Bone Spavin, Curb, Fistula, Poll-Evil, old running-sores, proud flesh, Thrush, hoof-rot, contracted feet, &c.

It should be applied once a day for three days, and it is always best to apply it in the morning. The fourth day dress with lard. No other kind of oil or grease will answer so well as lard. Horses that are very tender or thin-skinned, will not require as many applications as others with a thicker and tougher hide. Judgment must be used, and if one or two applications will blister the parts well, there is no need to

use it oftener. The animal should be watched for a short time after an application to prevent him from biting or rubbing the parts to which the medicine is applied.

VETERINARY LINIMENT.

Gum Camphor ;
Turpentine, of each two ounces ;
Alcohol, one pint.

Mix. This is a general liniment and it will be found very useful in many cases, as sprains, bruises and injuries of different kinds, when an active blister is not required.

LINIMENT OF ACONITE.

Tincture of Aconite Root, two ounces ;
Sweet Oil, four ounces ;
Creosote, one ounce.

Mix. This is one of the most valuable embrocations which can be applied to a painful bruise, or sprain of whatever kind. It allays and removes inflammation, irritation and pain.

HOOF LIQUID.

Neatsfoot Oil, one-half pint ;
Turpentine, four ounces ;
Oil-Tar, six ounces ;
Origanum, three ounces.

Shake well. This is one of the best applications for a hard, dry foot. Apply to the bottom of the foot once or twice a week.

CERATES OR OINTMENTS.

Used for dressing sores and ulcers.

SIMPLE OINTMENT.

Yellow, or White Wax, three ounces ;
Olive Oil, two ounces ;

Melt them on a slow fire.

GREEN OINTMENT.

Verdigris, one ounce ;
Sulphate of Iron, one ounce ;
Rosin, four ounces ;
Turpentine, two ounces ;
Lard, one pound.

Melt the Lard and Rosin together, then remove from the fire and add the Verdigris, and when nearly cool add the Iron and Turpentine. This is an old but excellent application for sores, scalds, burns, cracked heels, scratches, &c.

CLYSTERS.

For Colic of all kinds.

Warm Rain Water about blood heat, one stable bucket full ;
Common Salt, four ounces ;
Soap, sufficient to make a good lather or froth.

Of this four quarts may be injected into the rectum every half hour until the animal is well.

DRENCHES.

Used in cases of Colic.

Hyposulphite of Soda, one ounce ;
Laudanum, one ounce ;
Aromatic Spirits of Ammonia, half an ounce ;
Tincture of Aconite Root, twenty drops ;
Water, one-half pint.

To administer a drench, raise the head and give but one quarter of the medicine at once. Let this be swallowed before there is any more given. By giving but little at a time all the medicine can be administered without loss.

Never drench the horse through the nose. The anatomical structure of the horse's throat renders drenching through the nose exceedingly dangerous.

HOW TO TELL THE AGE OF HORSES.

The appearance and shape of the teeth constitute what is generally relied upon as a means of determining the age of a horse, and, in connection with other circumstances, concerning which the experienced horseman will always ascertain full particulars, if it be possible to do so. They really form quite an accurate mark of age.

We will now point out the peculiarities which generally characterize the horse at different periods



*Upper jaw of a
three year old.*

of the horse's life, and by which his age may be determined with considerable exactness.

At two years old, the young colt has a full set of *milk* or *colt* teeth, but now he be-



*Upper jaw of a
four year old.*

gins to need others, not merely larger, but also of a firmer, more durable composition and setting; and this necessity Nature meets by commencing the replacement of the first set by the permanent teeth. This operation begins with the first grinder—the for-

ward one, but as the grinders are all of them, too far back in the mouth to be easily inspected, we must continue to depend mainly upon what we can discover in connection with the nippers.



Upper jaw of a five year old.



Upper jaw of a six year old.

During the third year the central nippers, both the upper and lower ones, are being shed, shifted, as it is often called, and by the time it is completed the permanent pair have become nearly full grown. (See cut of the jaw at three years old.) In the fourth year the same changes occur. Two new teeth make their appearance in the upper, and two in the lower jaw. (See cut of the jaw at four years old.) There yet



Upper jaw of a seven year old.



Upper jaw of an eight year old.

remain the corner teeth above and below, which will be shed and replaced at the age of five years. The tushes or bridle teeth are generally in plain sight. At five years old the mouth is complete in the number of its teeth, and is now said to be a full mouth. (See cut of the jaw at five years old.)

At six years the central nippers of the lower jaw

are so much worn down that the cups are obliterated, and the central nippers in the upper jaw show a decrease in the depth of the cups. (See cut of jaw at six years old.)

At seven years the cups of the four central nippers in the lower jaw are no longer visible, and the cups in the four central nippers of the upper jaw are fast wearing away. (See cut of jaw at seven years.)



*Upper jaw of a nine
year old.*

The only guide we now have is the shape of the face of the teeth or nippers. At eight they are all oval. The cups in all the teeth in the lower jaw are worn out, yet the enamel



*Upper jaw of a ten
year old.*

or white mark is still visible. The upper teeth retain the cups or marks longer than the lower teeth. The lower jaw alone is moved and pressed forcibly upon the food; the upper jaw is without motion, and has only to resist the pressure. At nine the cups are worn out of the central nippers of the upper jaw, and a hook has been formed on the corner teeth of the upper jaw. The face of the teeth diminish in size. (See cut of jaw at nine years.)

The guide which will enable us accurately to determine the age after nine years old, must now be taken from the shape of the upper surface of the nippers. At eight they are all oval, the length of the

oval running across from tooth to tooth ; but as the



Upper jaw of a thirteen year old.

horse gets older, the teeth diminish in size, and this commencing in their width, and not in their thickness. They become a little apart from each other and their surfaces are rounded. At nine the



Upper jaw of a sixteen year old.

center nippers are evidently so ; at ten the others begin to have the oval shortened. (See cut of jaw at ten years.)

At eleven the second pair of nippers are quite rounded ; and at thirteen the corners ones have that appearance. At fourteen the faces of the central



Upper jaw of a twenty year old.

nippers become somewhat triangular. At sixteen they are all so. At nineteen the angles begin to wear off, and the central teeth are again oval, but in a reversed direction, viz., from outward, inward ;



Upper jaw of a thirty year old.

and at twenty they all wear this form.

At thirty years old the cups and all marks have disappeared, and the shape of the teeth is reversed. (See cut of jaw at thirty years old.)

The general indications of old age, independent

of the teeth, are deepening of the hollows over the eyes ; gray hairs, and particularly over the eyes and about the muzzle ; thinness and hanging down of the lips, and sharpness of the lower jaw bones.

CASTRATING COLTS.

This operation, to say the least, is a barbarous one, necessity only justifying its performance. This fact admitted, it becomes us as rational beings to perform the operation in such a manner as involves the least risk, least pain, and the least inconvenience to the animal operated on. Castration is one of the most ancient operations known to man. The different methods which have from time to time been practised we will not stop to consider in this little work, but will be content with mentioning the operation introduced into the United States by Dr. Robert Jennings, of Philadelphia, Pennsylvania, several years ago. This consists in removing the testicles by means of the ecrasseur, an instrument invented for the removal of hemorrhoides (piles) in man. The advantages of this operation over all others are : First, it is safer, better, less painful, more scientific, and less barbarous than any other at present known. Secondly, the wound heals quickly, seldom requiring more than two weeks, and usually not more than one. Thirdly, the operation is less troublesome to the skillful operator, as well as to the owner of the animal, as the colt is done with as soon as it is let up. No after treatment, as a general thing, is required, as in

other methods, such as keeping the scrotum open, etc., etc. Fourthly, little or no swelling takes place, the animal being scarcely affected in any perceptible way by the operation. Where a sufficient number of colts are obtained in any section of the country to justify an excursion, the services of the undersigned can be had.

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Diseases of Cattle.

This part of our work is devoted to the explanation and treatment of the various diseases affecting the ox, together with an account of the disease incident to milch cows. Cattle diseases are in many particulars similar to those of the horse. Thus, inflammation, irritation and fever, are common to all animals. Still, however, there are many diseases affecting cattle in which we fail to find a counterpart in any disease attacking horses.

CATTLE PLAGUE.

This is a vague name, and conveys no intimation of the cause, nature, seat or characteristics of the affection, whatever it may be. Therefore, for the credit of the writer, and the convenience of the public, no disease should be called a plague. There is now no disease affecting the human family called a plague. The experienced physician can tell the nature, seat, and complete history of the disease, and give it a name by which it will be known and recognized. Why should not the veterinary surgeon do

likewise? So long as such men as Gamgee continue to write and speak of cattle plague, so long will veterinary surgeons continue to labor in vain for the public confidence. Why should not things, states and conditions be called by their right names. Cattle disease, cattle plague and rinderpest should long ago have been blotted from the books; for, at least, they only serve as a cloak or cover to hide the innate ignorance and stupidity of some veterinary surgeons—horse and cow doctors, particularly. The word plague means a stroke, and that is all the insight a person can derive from the word. As every disease may be considered a stroke, why not add what kind of a stroke it is?

LOSS OF THE CUD.

This occurrence is the symptom of, and not a disease. Loss of the cud, or rumination, accompanies almost every disease of any importance attacking the ox or cow. When rumination has ceased for a time, and is resumed again, it is a good symptom that the animal is better, and an indication that the functions of the body are about being resumed again, and are demanding food for their nourishment. Loss of cud is among the first symptoms observed by farmers in case of bronchitis, pleuro-pneumonia, hoven, aphtha, etc.

HIDE BOUND.

This is not to be taken as a disease, but merely the result of faulty digestion and assimilation.

TREATMENT.—Give one pound of epsom salts, half an ounce of ginger, and mix in two bottles of cold water, sweetened with molasses. Next day follow with the following powders: Powdered ginger one ounce; fenugreek, one ounce; caraway seeds half an ounce; mix and give in one dose; and one dose may be given daily for a week.

HAIR BALLS.

These are very common in cattle, and are introduced by the animal licking itself and swallowing the hair. These balls are found after death, and are of various sizes and thoroughly felted.

CHOKING.

This is of frequent occurrence among cattle or cows, fed upon potatoes, turnips, or whole corn, etc.

TREATMENT.—When the potato is in the upper or middle third of the gullet, the mouth of the animal is to be held open by means of a balling iron, or some other contrivance, while a person having a small hand should pass a cord like a clothes-line, with a loop on the end of it, and try to get the noose over and beyond the obstruction. If the substance be low down in the gullet, manipulation may be tried from the outside, by tightening the skin upon the obstruction and trying to move it up, if possible; but downwards if it will not require too great force being used. Failing to move it up or down, try to dislodge it by pouring small quantities of oil or melted lard, not hot, down the throat. If this also proves ineffectual, the probung should be used; or in its stead, a strong,

flexible cane or rattan may be tried, but care should be taken to have the cane go down the right passage; if coughing is set up on the introduction of the cane, have it withdrawn, as it has entered the air passages, but try till it has been brought properly down to the obstruction. With patience and perseverance the difficulty will usually be overcome. Still, however, there are cases which require the gullet to be opened over the place of obstruction; a safe operation, requiring only a simple cut through the skin and outer portion of the gullet, which will readily heal without much trouble, by bringing the lips of the wound together with a stitch or two of strong but small twine or saddler's silk, by means of a small packing needle. Feed the cow or ox for a week or more on soft or prepared food, until the wound is healed.

CALVING.

This is an operation of nature which most dairy-men and farmers are familiar with, and upon which we will say comparatively little. Before we do this, however, a short description of the symptoms by which it is known when a cow is in calf will be given.

The first, and probably the surest sign of a cow being with a calf, is the increased size of the belly. The hand placed firmly against the flank or portion where there are no ribs, a hard, firm body will be felt, which is the calf. As time passes along, the movements of the calf in the womb can be occasionally seen. Within a few weeks of calving, the external organs of generation increase in size, and discharge a

thick mucus. The udder becomes swollen, hot, and full of first milk, which is a sure indication that the time for calving is near at hand. This is accompanied by a relaxation of the ligament of the pelvis, or, as the dairymen say, "She is down in her bones."

From the time of conception till natural parturition or calving, it is about forty weeks, or two hundred and eighty days. There are, however, opinions at variance with these dates, founded upon the sex of the calf. If a male, it is carried longer than if of the opposite sex. These opinions form ground for debate, therefore we will drop theorizing.

NATURAL CALVING.—If the natural presentation and size of the calf be right, no trouble need be apprehended, and the cow may be left to herself. The ammon, or water-bag, having been ruptured or broken, there will be seen the fore legs and head of the calf, resting upon the two feet, and protruding a little. If, however, the cow should labor long with the calf in this position, and she is weak and thin in flesh, she may be assisted. This can be done by taking hold of the two feet and part of the head, and when the cow makes an effort to strain, pull at the calf. If sufficient force cannot be applied by the hands, then place a soft but stout rope around the feet of the calf, and apply traction or force. Before any force whatever is used, be sure that the mouth of the womb is sufficiently dilated. For if this is not the case, then by using force the womb is torn or ruptured, and the death of the cow is the result. Be

patient, and time—the prover of all things—will also prove the wisdom of waiting. If after delay, however, both cow and calf should be lost, be consoled by the fact that likely the one or both would have been lost anyway; for there will be found some one malformation, either in the pelvis or arch of the pubis of the cow, or an undue proportion of the size of the calf to the pelvic arch through which it has to pass to be delivered. Sometimes the calf is over-sized, from water in the head or water in the belly (dropsy), or both of these conditions combined. Before a calf of this description can be delivered, and the cow relieved, the head of the calf must be pierced to lessen its size. A long, spear-like instrument—trocar—is used to pierce the belly or abdomen of the calf to empty the fluid, to lessen also its great size. When this is properly done, and the cow is not too greatly exhausted, she may complete the delivery without further assistance.

TWIN CALVES.—Twin presentations are not as various as they are curious. Thus, we sometimes see a fore leg of one calf and a hind leg of another. In this condition of things it must be evident that no force should be used to bring them away till each calf is properly adjusted in its position. The best and quickest way is to adjust the calf which first presents itself, and if portions of the other present themselves also, push them back into the womb. When one calf is safely delivered, not much difficulty will be experienced with the other.

UNNATURAL PRESENTATION.—The unnatural po-

sition of calves about to be delivered is happily rare, and forms the exception to the natural law of presentation. However rare these presentations are, they nevertheless are sometimes seen. Thus, the feet are presented, and the head of the calf doubled on its neck, and in the womb. This condition is best remedied by tying a rope around the fore feet, or both together, and raising the hind parts of the cow off the ground, thus forcing the calf down to the fundus or bottom of the womb. This being done, reach the hand in and seize the calf by the head, and bring it with you, while an assistant is pulling at the rope attached to the fore legs. By adopting this plan a safe and speedy delivery will be effected. Do not endeavor by force to bring the head of the calf into the neck of the womb, when there is no room to do so, without first elevating the hind portion of the cow sufficiently for the calf to fall to the bottom of the womb, where there is plenty of room to turn, not only the head but the whole body also.

Another form of malposition is, where we have the head and neck within the neck of the womb, without the feet and legs. The only alternative in this case is to remove the head by cutting it from the neck, leaving, however, sufficient skin for attaching a rope to it. But if the head has not fairly passed out, an attempt should be made to put it back into the womb again, and not to bring it out. Before pushing it back fix a rope around the lower jaw. The legs only should be searched for by the hand, and when found, secured by another rope. Afert

both fore legs and head are thus fairly within the grasp, use traction or gentle force, and take advantage of every strain made by the cow, and by these means the calf will be safely delivered.

The next unnatural form consists in the presentation of either of the fore legs, where the nose is pressed downward, and the crown of the head only is seen or felt. Secure the leg which is seen, by a cord, push on the crown of the head or elevate the hind parts of the cow a little, to force the calf slightly down in the womb, then pass a cord around the lower jaw, and find the other fore leg, securing it by a rope. The rope attached to the lower jaw should be first pulled to straighten the head on the neck, then the cord attached to the legs should be pulled simultaneously, and the head and feet as they are presented should be guided by the hands of an assistant until the head and both fore legs have fairly entered the proper channel.

The next presentation is what is called breech presentation. The tail and buttocks are here presented for delivery, which, of course, cannot be effected in such a position. The only chance for a safe delivery is to get hold of the hind legs, which is not easily effected; but perseverance assisted by ingenuity, can do much, when it is known what is required. In this case get hold of both hind legs, and when they have been secured and brought into the proper channel, delivery can be easily effected.

The next and last presentation which we notice is where the crown of the head is presented, and the

calf is lying upon its back. This is a tedious labor, and to effect a delivery at all, the calf must be turned, which, by the way, is not an easy task ; still, however, it can be done by securing the head and fore legs with a rope. Should all efforts fail, do not exhaust the strength of the cow, but hasten to detach the legs of the calf, opening its belly, and in some cases the head also, to lessen its size, thereby securing the delivery of a mutilated calf, but a living cow. In all cases of calving it is well to administer a stimulant, of four ounces of Jamaica ginger made in a tea, with two quarts of water. Give as a drench.

RETENTION OF THE PLACENTA OR AFTER BIRTH.

As it is sometimes called, the cleansing of the cow. If the cow has gone her full time with calf, and is in a healthy condition, the after-birth will not be retained after she has given birth to her calf. When a cow does not cleanse properly, and within a reasonable time, there is then something otherwise wrong with her health, such as debility and want of vitality in the system. It is this that must be looked to.

TREATMENT.—Cows not having cleansed properly, within a few hours after calving, should be given the following mixture: Epsom salts, one pound ; powdered ginger, one ounce ; mix, and give in three or four bottles of warm ale, porter, or warm water, sweetened with molasses. This mixture, not having the desired effect in four hours, the hands, well greased, should be introduced, and the after-

birth, at its attachments, gently pressed. This must not be accompanied with much pulling, as pressure with the finger and thumb will be all that is required to remove it. Then give the cow a little warm ale or molasses water, with half an ounce of powdered ergot of rye ; repeat in half an hour. This will cause contraction of the womb. When decomposition or putrefaction of the after-birth has taken place, which is often the case when the cow has not cleansed, after the removal, wash out the womb with carbolic acid, half ounce ; water, one gallon, milk warm. Also, administer as a drench, one ounce of hyposulphite of soda three times a day, for a few days, to neutralize any of the poison of putrefaction that may have been absorbed into the blood. Give the cow good, nutritious food to support her strength.

FALLING OF THE WOMB. (CALF BED.)

This deviation from the normal or healthy condition is a great trouble to the farmer and breeder.

CAUSE.—Relaxation of the horns or ligaments of the womb, from a weak and relapsed habit of the body, accompanied by debility.

PREVENTION.—Immediately after calving apply a truss or pad to the mouth of the vagina, and secure it in the following manner : Put a large horse collar on the cow's neck ; one surcingle around the body of the cow behind the fore legs, another in front of the udder and hind legs. This being done, attach a small, soft rope to each side of the collar, bring it along each side of the backbone, give it a hitch around the

fore surcingle, and the same to the hind one ; then bring the ropes close together under the tail, and place the pad over the proper part, with the ropes laid firmly over it. Here tie both ropes together with a string just below the pad, then bring one rope down between the udder and thigh, give it a hitch around the hind surcingle or band, and finally secure the end of the ropes to that portion coming along the back.

TREATMENT.—When the womb has fallen down and is inverted, assistance should be had at once. The womb or bag should be lifted into a clean cloth, and held up by a person on each side. There are two ways of returning the womb into its proper place ; the one by pressure on the neck or small portion of the womb, and the other by pressure on the fundus or large end, or bottom of the womb ; this last is the best way, because we have not only the mere pulling of the womb to contend with, but its inversion also. So, therefore, apply gentle pressure to the bottom of the womb, first having cleansed it from dirt, dung and straw. The operation will be effected more easily by having the cow placed with her fore legs low, and the hind ones high, so it will slip in without much difficulty. After it is in, the cow should be kept standing in such, or even lying in this position for a day or so, and a pad already spoken of should be applied as soon as the operation is finished. The pad is much the better way of securing the parts than by sewing the lips of the vagina.

Where all efforts fail to put back the bed, and

when decomposition or mortification has ensued, the only chance to save the life of the cow is to cut the womb or the bed at its smallest or neck portion ; but before doing so, tie firmly round the neck of the womb a well waxed cord, which will prevent bleeding. This is to remain on the bed, which is left. Give immediately twenty-five drops of the tincture of Aconite root every three hours, till four or five doses are given, which will relieve pain and control the circulation.

RUPTURE IN CALVES.

The rupture we are now considering is that known by the name of Umbilical, which occurs in young calves, and consists in the protrusion of a portion of and intestines through the naval, thus forming a small tumor. This condition is often congenital, or found on the calf at birth.

TREATMENT.—Force the bowel up into the belly, gather the loose skin together, tie a well waxed cord tightly around it close to the belly, and a strong pin may be forced through the skin below the ligature or cord, to keep it from falling off before the loose skin comes away ; in a few days the skin will fall off, leaving a healthy sore, without any hole or rupture.

HOVEN OR BLOATED.

So called from the appearance and sound. The evolution, or giving off of carbonic gas, from the large quantity of grass of clover when wet, contained within the rumen or paunch, together with the suspension of the function of digestion and peristaltic

action of the bowels, all of which combined go to make up the disease called hoven. Hoven may occur in one hour, for we often see cows turned out to pasture in the morning, and are almost found suffocated in an hour afterwards. In cases of this kind there is no time to be lost. Every farmer should be prepared to meet and cure them as they occur. There is no time to run for assistance.

CAUSES.—Over-filling the paunch, and in too quick a time—before the stomach has time to act upon it ; hence fermentation is set up.

SYMPTOMS.—Great distress ; the sides are distended, and when struck sound like a drum ; the beast lying down and rising ; there is great suffering, and if not speedily relieved, the rumen will give way, burst or rupture ; if this does not happen shortly, the brain becomes affected, and the beast dies unconscious. The disease runs its course with fearful rapidity.

TREATMENT.—Give immediately two ounces or two large tablespoonsful of Hyposulphite of Soda, dissolved in one pint of warm water. Dashing cold water over the loins often cures the affection. Some practitioners recommend puncturing the rumen or paunch, but there is always some danger attending it, and, at best, it is only palliative.

MILK FEVER.

Milk fever occurs from the first to the third day after calving ; rarely after the third day. It is seldom met before the fourth calving, then attacking chiefly cows of select breeds, and good milkers. Milk fever

consists in inflammation of the womb, which sometimes even extends to the bowels.

SYMPTOMS.—Loss of appetite ; cud, or rumination ceases ; staggering gait, wild looks, fall and cannot rise. If the disease be not checked, the brain will soon be affected also, when the cow will dash about with her head and horns, plunging them into the ground.

CAUSES.—Undue determination of the blood to the womb from over-feeding before and immediately after calving, and from sudden changes of weather at the time of calving.

PREVENTION.—Give one week before calving, one pound of Epsom salts, half pound table salt, and one-half ounce of ground ginger. Mix in four bottles of cold water, and sweetened with molasses. Let the cow's feed be of the lightest kind, such as hay and thin slop mashes, and no meal, grain, or solid food. This measure will lessen the tendency to interruption of the circulation, and will improve the health and tone of the whole system. To avoid as much as possible the effects of sudden changes of the weather, have the cow brought in the barn or shed. When milk fever is anticipated, give, a few hours after calving, twenty-five drops of the tincture of Aconite root, in a little cold water, which may be repeated every six hours until four doses have been given. Nothing that I am acquainted with is as capable of equalizing the circulation of the blood, by controlling the heart's action, Aconite ; and for this purpose I

highly recommend it to farmers and breeders of stock throughout the country.

TREATMENT.—When the disease is present, give at once thirty drops of the tincture of Aconite root, and half an ounce of pure Opium in powder, in a bottle of thin gruel. The Aconite must be repeated every four hours, without the Opium, until four or five doses are given. Place chopped ice in a bag on the forehead, and attach it to the horns, renewing it when needed. This being done quickly, at more leisure get epsom salts, one pound table salt, one pound; ginger, half an ounce; mix and dissolve in four bottles of cold water, with a little molasses to sweeten it, and give at one dose. After this medicine has been given, turn the cow from side to side, every four hours, or when the Aconite is given, which will save labor and unnecessary excitement to her. She should be left as quietly as possible, and her legs and body kept warm, thereby relieving the womb to that extent. Do not deny pure air nor plenty of cold water to the afflicted animal, for she not only needs them, but they are indispensable to a sure and perfect recovery in most diseases, and as much so, if not more, in a disease of this kind.

DISEASES OF THE BLADDER.

Bladder diseases in cattle generally are the result of irritant matter in the urine, and of calculi or stone in the bladder.

SYMPTOMS.—The animal is restless, having pain and irritation, and constantly endeavoring to make

urine, but only a few drops passing at a time. The eyes are invariably blood-shot. Should the animal not be relieved, it will die from weakness, exhaustion, constant excitement and irritation.

TREATMENT.—Give at once twenty-five drops of the tinct. of Aconite root, to relieve irritation and pain. Give freely linseed tea and other demulcents, to soothe the kidneys and bladder. In order that any earthy matter which may be present in the ureters, kidneys or bladder, may be lessened or destroyed altogether, give sixty drops of muriatic acid once or twice a day in cold water. This, however should not be given while there is pain or irritation present.

PROLAPSUS OF THE BLADDER.

Among cows, during and after difficult calving, there will be sometimes observed a white, shining, watery bag protruding between the lips of the vulva. This is the bladder holding the urine. It is twisted at its neck, and, therefore cannot be emptied. Many a good cow has been destroyed by ignorant persons mistaking this for some of the watery membranes surrounding the calf, and, therefore, intentionally tearing it asunder.

TREATMENT.—Carefully examine the distended bag, its size and shape. Having determined that it is the urinary bladder, carefully cleanse it, if dirty, and pass the hand, carefully oiled, along its surface, ascertaining which way the turn or twist is made. Having satisfactorily known this, take the bladder in the other hand and reverse the turn or twist. And

then, should the bladder again return, a roll of soft cotton cloth should be used to plug up the vulva an hour or two. If this should not be sufficient, a stick or suture of stout saddler's silk, or other strong material, should be passed through each side of the vulva with a small packing or darning needle, and be allowed to remain a few days.

RINDERPEST, HOLLOW HORN, WOLF IN THE TAIL.

These are Dutch names for cattle plague. So much do I abhor the employment of such ignorant and unmeaning names, that I cannot but entertain a poor opinion of the scientific attainments of those who constantly use them.

FEVER.

Cows are subject to ephemeral fever, or more plainly speaking, a fever of a day's duration, which passes off without any trouble. This fever has been thought by some persons to depend upon hollow horn or wolf in the tail, and they bore the horns of the poor dumb brute.

GANGRENE OF THE TAIL.

This is not, as yet, at all events, an American disease, but is of frequent occurrence among the cows of continental Europe. The fact, however, I believe to be the only true reason why the Pennsylvanians will persist that cows have wolf in the tail, accompanied with an empty horn.

SYMPTOMS.—We are told by writers that the tail becomes paralyzed, its skin soft, swollen and filled with

water at its end, and when opened a bad smelling ichor is discharged. The disease spreads, until finally separation of the tail takes place, leaving the animal without one.

INFLAMMATION OF THE UDDER. (GARGET).

Inflammation of the udder in cows is often of a very troublesome character. It occurs shortly after calving, and in some instances not for a week or two after. The inflammation is usually confined to one quarter of the udder only, and may be of an acute or chronic character.

CAUSES.—Want of proper attention in not milking the cow sufficiently after calving, and in many cases by not milking the cow when her udder is almost ready to burst, even before calving. In a word, if the udder and teats, are kept from over-gorgement, there can be no udder disease. The trouble is, that all cows are not alike in the production of milk, but unfortunately they receive the same treatment, and hence those cows which are endowed with great milking qualities are usually the victims of garget.

TREATMENT.—In the acute form, apply warm poultices to hasten suppuration. Where the parts point and contain fluid or pus, open deeply at the lowest point, that the pus may escape without forcing. When properly discharged, heal up as a common sore. By all means do not forget to milk the udder well, and the best plan will be to put two

strong calves to suck, for by so doing the pus may be drawn off by them.

DISEASES OF THE TEATS.

Teats of milch cows are often subject to disease and derangement.

1st. Milkstones sometimes stop the flow of milk, and can be felt within the milk channel when the teat is pressed between the fingers. For their removal take a silver probe or knitting needle, and, if possible, force the obstruction up into the udder.

2d. Stricture of the milk channel of the teat causes a small stream of milk to flow, and impairs the usefulness of that quarter of the udder. This can be remedied by using the silver probe or needle, commencing however, with a small size, and gradually using thicker or larger ones, till the channel is as large as wanted. This operation will have to be carried on for a week or two, the first day using the small probe three times in the day, and following the next day with the larger size, and so continuing with the other sizes until finally cured.

3d. Warts are occasionally a trouble to the cow and to those who milk her. Irritation, and sometimes swelling, is induced, which causes closure in the channel of the teat. Warts are to be removed by a pair of sharp scissors.

4th. Sore teats are cured by the simple ointment, one ounce, and one drachm of verdigris, well mixed; apply twice a day.

LUNG FEVER, LICE, MANGE, JAUNDICE SORE THROAT, DISEASES OF THE TEETH.

The symptoms and treatment are the same as recommended for horses, only double the doses, (which see).

BRONCHITIS.

This is an inflammation of the windpipe, and even extending to the lungs themselves. There are every variety and severity seen in this disease, from the simple irritation of the outpouring of serum from the blood into the cavity of the chest, resulting, if the cow be with calf, in abortion, and often, among others, in the death of the animal, after a long and lingering hectic fever. Bronchitis and throat and chest diseases in cattle, are insidious and deceptive, for the ox does not, even under the most severe forms of these; exhibit fever and irritation, loss of appetite, etc., which are shown at once, when attacking the horse. Not until the disease has made considerable progress does the ox or cow show symptoms of disease; so much is this the case, that I have on several occasions pointed out bronchial and chest disease in milch cows, while the owner failed to see anything wrong. Indeed this is the great difficulty in the successful treatment of diseases in neat cattle, not applying the remedies at an early stage of the affection. A closer attention, and more careful observation on the part of farmers and others, is almost imperatively demanded, and more especially should this be the case

with dairy people, for, when anything in the least unusual is discovered, such as a very slight grating sound in the windpipe, when the ear is steadily applied, the cow should immediately have some iron or tonic powders, and all will be well in a few days again ; whereas, if left to itself, serum is exuded, and debility, weakness, and even death may follow. I would say to dairymen, study the sounds in the windpipe, both in the sick and well animal, and you will not only perfect your knowledge in this particular, but I assure you it will be no idle study, for in a short time you will not only be able to detect these insidious diseases in the beginning, in your cows, but can apply the remedy also, thereby saving yourself from inconvenience and loss which some can ill afford. In this way you can prove to your neighbors, and to the world at large, that cattle diseases are not so difficult to cure after all, and that while others have so long sat and brooded with soured and sullen minds over their losses, and ignorance and inefficiency of cow doctors, you have obtained a mastery of the situation.

CAUSE.—Bronchitis is a disease which rarely attacks one animal only, but usually the most of the herd will have been attacked before it leaves the place, and then it will leave when there is no more victims to seize. These epizootic diseases depend upon what is called atmospheric cause. Such condition usually manifests itself in the spring of the year, and sometimes early in the summer. The peculiarity of the air causes irritation of the fauces of the

mouth, throat, or windpipe, and as before stated, sometimes extends to the chest or lungs themselves.

SYMPTOMS.—In a week or so after the attack, a slight, husky cough, with weeping from the eyes, and a watery discharge from the inner corner of the nose, will be seen, and by applying the ear to the course of the windpipe, a slight, rough and grating sound will be heard. This sound cannot be heard until twelve hours after the attack. According to the amount of serum poured out, and whether the cow be in calf, and how far she is gone in calf, so will the quickness and depth of the breathing be. Bronchitis is the forerunner of pleuro-pneumonia, commonly called the "Massachusetts Cattle Disease."

TREATMENT.—If the disease be discovered within forty-eight hours from the attack, take from four to five doses of the tincture of Aconite root, twenty-five drops to a dose, and give one dose every four hours. If there be uncertainty as to whether the disease has existed longer or shorter, to save time, the aconite may be given along with the following powders, three times a day : Powdered Sulphate of Iron, three drachms ; powdered Gentian Root, half an ounce ; powdered Ginger Root, half an ounce ; powdered Sulphite of Soda, half an ounce ; mix and make a drench, to be poured down the mouth out of a strong bottle. This medicine is to be continued (omitting the aconite after the fifth dose), till the animal is well or looks brighter, and eats all it gets. In addition to the above medicines, give once or twice daily, half an ounce of commercial sulphuric acid,

largely diluted or mixed in half a bucket of cold water. In feeding care should be taken not to give too much, so as to bring on dangerous indigestion. Cold water and pure air are indispensable agents in the treatment of this, and all other diseases of horses and cattle.

SPAYED COWS.

The following are the reasons why dairymen should spay their cows when not intended for breeding:

1st. Spayed cows are more easily kept in good condition than cows not spayed.

2d. They are less liable to sickness of an epizootic kind, and when sick are more likely to recover.

3d. When epizootic diseases are present in the vicinity, or even in the herd, spayed cows are always in condition and fit for the butcher. To prevent loss and save expense in the treatment, with the attendant risk of loss of some, and loss of condition and milk of all that are affected, they can be sold without loss, which is not the case with cows not spayed, and when pleuro-pneumonia is among them.

4th. Spayed cows give the same quantity and quality of milk all the year round, if properly fed and cared for.

5th. Ten spayed cows will give the year round as much milk as double that number of cows not spayed, thus saving the interest on the outlay for ten cows, together with the risk from loss of some of the

principal, by death of one or more from sickness or accident, not to speak of the feed of ten cows. Between the feed of ten cows and their manure, the farmer can best estimate the difference in value.

6th. With spayed cows there is no risk to run from milk fever, nor trouble with cows called bullers.

7th. To fatten a cow, spay her instead of giving her the bull, as is the present custom, by which feed and time are consumed, and the animal is not made very fat after all, for she has to provide the fattening substance for the calf in the womb, which, if she had been spayed, would have been appropriated to herself, nor is this all, for the calf in the belly of a cow is at once discounted by the butcher, as it is not a salable article in market.

Having thus had a bird's eye view of the advantages to be derived from spayed cows, let us look in the same manner at the disadvantages of spayed cows.

1st. The expense of operation, and the attendant risk of the animal dying, although this is not great (about one in the hundred). The expense of the operation will be from three to five dollars, which will depend upon the distance the operator has to travel, and how many animals are to be operated on.

2d. Spayed cows are apt to accumulate fat and flesh, so that they become dry much sooner than cows not spayed. Still, there can be but little loss, for a fat cow is always ready for sale.

The author has now stated at length that treatment which the horse and cow for their own sake deserve, and which, for the honor of the being whom it serves, the animal should receive. He has designedly rather appealed to the reason of his hearers than sought to enlist their feelings. The subject was, indeed, a wide one. Man has hitherto been too content to consider animals as something given absolutely to him, to be treated according to his sovereign will or merest pleasure. He has not reflected that, when created lord of this earth, he was invested with a title which had its responsibilities as well as its privileges.

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Horse owners who are desirous of getting a carefully prepared medicine chest with all of the principal remedies recommended in this work, can be accommodated by enclosing price to the author of this book or S. Buckland & Son, druggists, Fremont, Sandusky county, Ohio.

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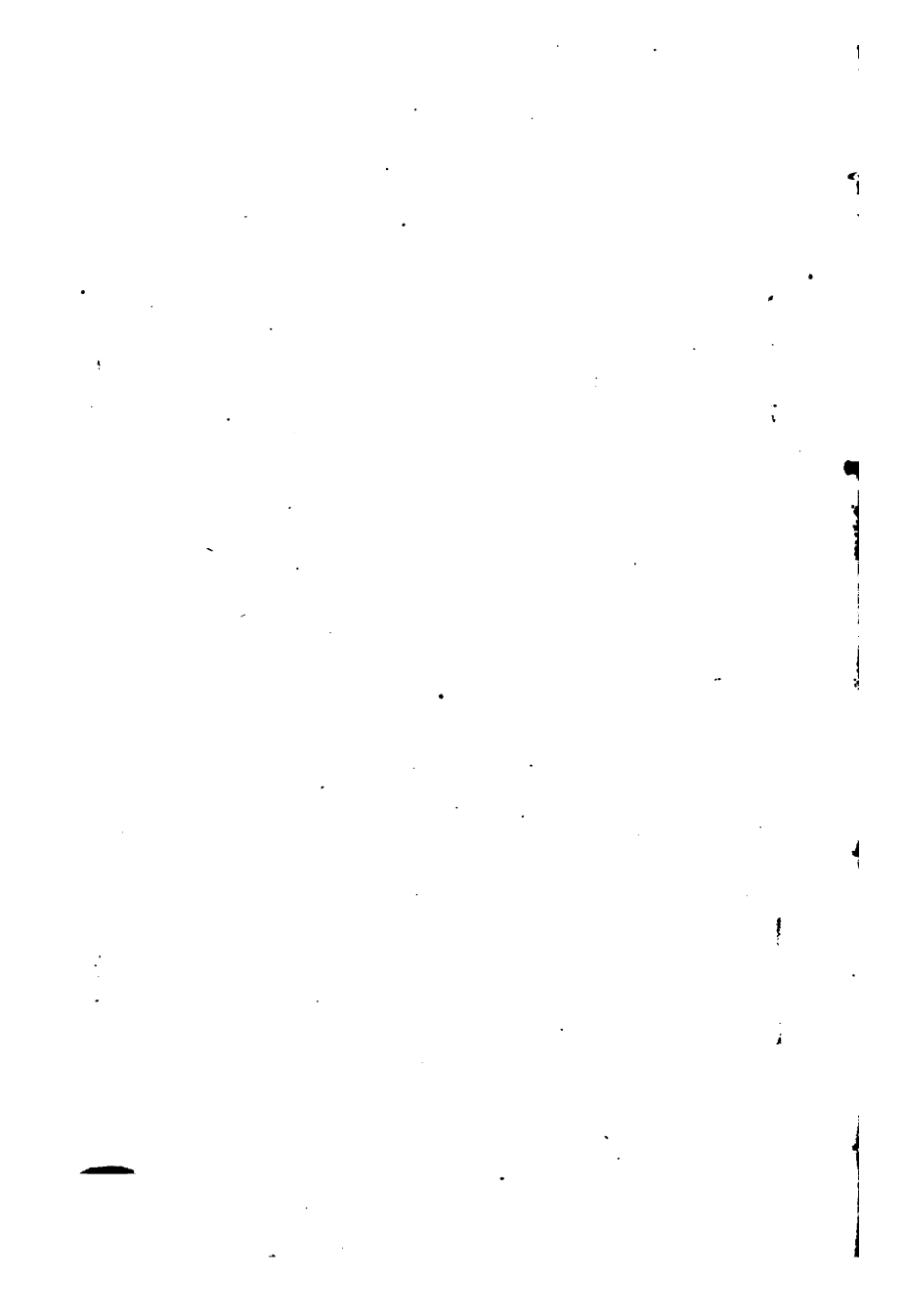
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G. O. HARLAN, Veterinary Surgeon,
Fremont, Sandusky Co., O.



APPENDIX

TO

Harlan's Horse-Owners' Guide.

DISLOCATION OF THE CERVICAL VERTEBRÆ WITHOUT FRACTURE.

Twisted or wry neck may occur from a variety of causes other than dislocation, such as when running and falling upon the head and neck. I have treated one case caused by the colt being cast in the stall with the head turned under and not found for some time afterward. The treatment will either prove successful or in the sudden death of the animal. If there is any swelling about the parts, warm applications should be made until the swelling is diminished. The animal should be cast upon the opposite side from that which the head is turned. Chloroform should be administered by one who understands the administration of the drug. A good strong headstall should be upon the head. Take firm hold of the head, and with a quick pull forward and downward, you will bring the neck straight. If the spinal cord is pressed upon in the reduction of the neck, immediate death may follow the operation. If not, the animal will recover the use of the neck in a few weeks.

SPINAL MENINGITIS, OR PARALYSIS OF THE HIND LIMBS.

Paralysis is rarely or never seen in horses thin in flesh, generally attacking horses that are in good flesh and having had but little exercise. Many pathological views are entertained regarding this disease. By some, it is termed a kidney disease; others, strain of the muscles of the back; by the profession it is termed Spinal Meningitis. The attack is very sudden, generally shortly after leaving the stable; the animal drags his limbs, or trails them to some extent; there is scarcely any elevation of the feet, or flexion of the joints, and a great tendency is shown to knuckle over at every step. The animal will break out in a sweat, and frequently drop down while in the harness. The suffering is very great for a short time; soon the spasm will subside and the animal will be easier, but still unable to rise upon the hind limbs.

Examination per rectum will reveal the bladder distended with urine.

TREATMENT.

The animal should be put in a large shed or roomy place on a ground floor, with plenty of bedding. The urine must be drawn off with a catheter. (For the horse the catheter should be 4 feet long; a mare will require one about 15 inches long.) The urine will be found highly colored, of a coffee color, and when cold will become thick. When the bladder is emptied, the shoes should be removed from the forward feet. Apply to the back, over the kidneys, mustard mixed with the tincture of capsicum; mix so as to make a thick cream, and apply with the hand, rubbing it in well among the hair. The mustard should be washed off the following day and fresh applied.

PREPARE THE FOLLOWING :—Bromide of potassium, 2 ounces ; tincture of belladonna, 2 ounces ; water, 1 pint ; mix.

Give of the above mixture 2 ounces in a half pint of water, as a drench, every three hours. Turn the animal over every time that the medicine is administered. The nursing must be unremitting, and of the best kind until recovery ; and feed as regular as a well horse, but should be soft food, such as bran, green grass, mixed feed of any kind except corn. About the third day the animal will attempt to get up ; assistance should be given, and when up, should be supported for a short time. No slings should be used ; they will distress the animal, and do more harm than good.

In this disease if the proper attention and treatment is not given, the animal drags life along from seven up to fourteen days ; and when the time is prolonged to the latter period he dies, a loathsome mass of putrefaction, in consequence of the chemical changes which have taken place in the system for want of vital action.

LAMENESS.

[From Williams' Veterinary Surgery.]

DIAGNOSIS—DEFINITION—SIGNS—CAUSES—
CONGENITAL MUSCULAR ATONY—EMBOLI
—METHODS OF EXAMINATION.

DIAGNOSIS OF LAMENESS.—The readiness with which some men are able to detect lameness seems to be an instinctive gift. Of such was Professor Dick, who could,

at a glance, even when a horse had been moved but a few yards, tell the seat and the cause from which he was lame. But whilst this is so easy a matter to some, to others it is a task of great difficulty, requiring long-continued practical study and observation. There are, however, cases where the most experienced are at a loss, and where even the most skillful differ in opinion. To the young man entering upon the duties of his profession, this matter is apt to cause many anxious thoughts and uneasy moments, as a mistake at this period may interfere very materially with his success in life. To such I would say, never express a decided opinion until you are thoroughly satisfied as to its correctness.

The first point to be determined is the limb in which the patient is lame. This may seem an easy matter, but in reality it is attended with no little difficulty. Thus, a mistake may be made by expressing an opinion that the lameness is in the hind leg, when in reality it is in the fore, and *vice versa*. This error has been so often committed, that the peculiarity of gait which has led to it has been called "cross-lameness." For example, a horse lame in the off fore leg is trotted from the observer; he seems as if he were lame in the near hind, for the quarter seems to ascend and descend. But when the animal is trotted towards the observer, it will be seen that the irregular motion of the hind quarters depends upon the elevation and dropping of the head and body; and that the lameness in reality is in the fore, and not the hind limb. An opinion must not be given before the horse has been trotted *from* and *toward* the observer. Of course there are many cases where lameness is so apparent that such an examination is quite uncalled for; at the same time, there are many other cases so slight in degree as to require the most rigid scrutiny.

The next difficulty is the detection of lameness when it is situated in both fore feet. When such is the case,

an animal may seem to go as if sound. Advantage has been taken of this by low horse-dealers, who, when they have a horse lame in one fore foot, make him lame in the other also. This is by them technically termed "beaning," and consists in placing a small piece of iron tightly under the shoe of the sound foot, which produces so much pain as to cause lameness. A more refined method has latterly come into vogue, that of paring the toe of the sound foot nearly to the quick, and so adapting the shoe as to press upon the weakened spot.

A horse lame in both feet, although he may not drop in his gait, will be short in action; will go, as it has been more forcibly than elegantly expressed, "like a cat on hot bricks." Each foot is carefully put to the ground, and quickly lifted up again, while at the same time there is a rolling motion of the body. In other cases he may exhibit the lameness in one foot as he goes *from*, and in the other as he *approaches* the observer. Such cases are very confusing, and require all the veterinary surgeon's discriminative powers. Care must be taken not to confound peculiarity of action with lameness. For example, a horse, especially a young one, may appear lame in the near fore foot, if led with a short rein, and his head pulled to one side, or when he is first bitted. This is called "bridle-lameness;" it disappears when the animal is run in a slack rein. Again, horses which are habitually exercised in a ring, or round a circle, invariably seem lame upon the fore limb nearest the center of the ring. When the lameness is in both hind limbs, the difficulty of diagnosis is not so great, as the animal is both stiff and lame; but mere stiffness must be distinguished from lameness, although it is often confounded with it. No doubt a stiff horse is an unsound horse; but he may be very useful for slow work, and at a suitable price. Mere stiffness may indicate age or fatigue, and often passes away after a

little exercise ; but lameness is indicative of actual pain or disease, and although it may pass off with exercise, still it must not be confounded with stiffness.

There are some forms of lameness which are apparent in the stable only, the movements caused by bringing the patients out of the stable being sufficient to produce the total disappearance of the lameness. Such being the case, the examiner should see the horse in the stable as well as out of it.

The manifestation of lameness by the animal is shown in two ways : 1st. During repose ; 2d. During movement. In some cases, the appearance, or expression, is much more palpable while the animal is standing still, as in many foot lamenesses. For example, a horse will continually point, or even elevate, the foot which is suffering pain ; if both feet, each foot alternately will be pointed or elevated. But if he is made to move, the extent of the lameness does not seem equivalent to the amount of pain so expressed. In other cases, the patient will stand perfectly firm, although in the great majority of cases the pastern of the lame limb is more upright than that of the sound one, as if he feared to put as much weight upon it ; but when made to move, he will immediately exhibit the lameness. Again, many cases are seen in practice where the patients come out of the stable sound, and when they have performed some work or exercise, lameness becomes manifest. Others, again, leave the stable very lame, and become freer in their action when they have been warmed with exercise. Such cases are apt to deceive ; therefore the veterinary surgeon should take every precaution against being taken unawares. Some horses exhibit their lameness when they "turn round." They may go well enough if led straight to or from the observer ; but when sharply turned round, they at once manifest their unsoundness ; and when an examiner as to soundness finds a man turn his

horse "carefully round," he should watch narrowly, and compel him to be turned quickly. Slight chorea or stringhalt is seldom detected except during the turn, and I have seen cases where it was manifested when the animal was turned one way only.

In other cases lameness may exist in two or more limbs, but not equally; and when so complicated, the animal may endeavor to save the lame limbs by throwing his weight from them in a manner so peculiar that it requires great care to distinguish the true nature of the case, and to form a correct opinion.

Again, there are some horses which walk down hill in so peculiar a manner that they may be supposed to be lame. This kind of walk has been termed a "three-cornered walk." The animal sways from side to side most awkwardly; his hind quarters being turned to the one side or the other, going forward *broadside-on*, similar to an animal going down hill with a heavy load behind him. Young horses, when being broken-in, should be corrected of this fault, as it is most unsightly; and to see a rider on a horse of this kind reminds one very forcibly of Don Quixote and Rosinante.

A touch of the whip or spur will cause the horse to improve his paces, and at once show that it is not lameness but laziness from which he is suffering.

The signs of lameness manifested during repose are very important, and sometimes diagnostic. A horse suffering acute pain in one of his legs will, if it be a fore limb, point the foot: by pointing is meant the extension of one limb in advance of its fellow. This is done for the purpose of relieving pain, and is performed by throwing the flexors into a state of relaxation, and removing any tension or pressure from the painful part. This *pointing* does not apply to every lameness in a fore limb, nor particularly to any cause of it, for in some rare instances a horse may be lame in both fore feet from chronic navicular disease, yet never point.

The pointing of elbow lameness is characteristic: the fore arm being extended, the knee in a state of flexion, and the foot perhaps upon a level with or posterior to its fellow. In severe shoulder-lameness, the pointing, if it can be called such, is backward, the limb relaxed, the knee bent, and the foot posterior to its fellow; sometimes the toe only touching the ground; the whole of the limb semi-pendulous, consequent upon the inability of the muscles to elevate it and bring it forward without pain; as a man fails to lift his arm when his shoulder is injured or diseased.

If the lameness be in a hind limb, the patient may stand with it either flexed, "knuckling over" at the fetlock, or with the foot off the ground altogether. When he stands with his lame (hind) leg in advance of the sound one, the position generally indicates disease in or below the hock.

A horse with acute pain in the fore feet will stand with his hind ones advanced beneath the body, resting first one fore foot and then the other, and every time he moves will rear up his head, and stretch out his neck in expression of the pain he suffers; but should the pain be in both hind feet, he will stand with his fore feet beneath his chest and toward the central line of gravity; his body pushed forward, and head hung down, in order to remove the weight as far as possible from the seat of pain. He will first ease one hind foot and then the other, breathing heavily, and showing other signs of acute pain. Pain in both hind feet often interferes with the act of urination, by preventing that stretching of the body which is so characteristic of that act in the horse. In such cases the poor patient will endeavor to stretch himself, will elevate the tail, but with a groan quickly assume his former posture, and suddenly "pick up" the feet alternately. From this fact it is often supposed that a horse suffering acute pain in the hind feet has some disease of the urinary organs.

The practitioner having satisfied himself which leg an animal is lame in, he must now endeavor to find out the seat of its cause. The late Professor Dick taught us to cause the shoe to be removed, and the foot examined in every case of lameness. This is a good rule to be followed, especially by young practitioners. He used to relate a case (showing the importance of this rule) where the os suffraginis was fractured. His great skill in lameness led him to think, upon examination, that the fracture was not the *only* cause of the lameness; he had the shoe removed, and discovered a wound from a nail in the foot, containing purulent matter. The fact of the horse being injured in the foot explained the cause of the fracture,—the animal, on account of the pain, having trod unevenly, prevented the equal distribution of his weight, and caused the fracture. The Professor had the foot attended to, as well as the fracture, and the patient made a good recovery. Now, had he been satisfied, as the majority of men would have been, that the fracture was the only cause, the purulent matter confined in the foot would have forced its way out at the coronet, a high degree of fever would have been excited, the case much complicated, and the Professor accused of maltreatment.

After duly examining the foot, and being satisfied that the lameness is not there, the practitioner must endeavor to find out where it is; but before considering the various lamenesses in detail, we must refer to the definition of the word and the variety of its causes.

The word *lame*, according to Percivall, is from the Anglo Saxon *lam*, weak; the terms *lame* and *weak* are synonymous in some parts of England; thus it is a common expression to hear, "that is a lame story," for a weak story; or a "lame sermon," for a poor, weak sermon; and more commonly, a "lame excuse."

The same writer defines it to be—"The manifestations in the act of progression, by one or more of the limbs, of pain, weakness, inability, or impediment."

This definition is very near the mark, but I think it would read better as follows :—A manifestation by one or more of the limbs, of pain, weakness, inability, or impediment ; the act of progression not being necessary to the manifestation of such. Percivall, however, must always be looked upon as a great authority, as he seems to have been a practical man in most matters, as well as an elegant writer.

Lameness is not of itself a disease, but a sign of it. It is the expression of pain or inability, the result of disease, accident, or malformation in the limb or limbs by which it is manifested. It may, however, arise from disease apart from the limbs, as from injury to or disease of the spinal cords or nerves, from cerebral disease, and occasionally disease of the liver. It may exist for a short time independent of disease—a mere expression of pain without disease, as from a stone in the foot, or a badly fitting shoe ; but if these causes of pain exist for any length of time, inflammation is sure to follow. Disease much oftener exists in a limb without lameness than lameness without disease. Thus, a horse may have a wound, ulcer, bony deposit, or a tumor, without evincing lameness. From these particulars we may argue that lameness is never present without pain, although Percivall asserts that inability, in the absence of pain, will be found as a cause of lameness, and he says : “Dislocation of the patella occasions no pain, and yet the horse is too lame even to move. The partial or complete ankylosis of a joint may cease to be attended with pain, and yet there may be permanent and irremovable lameness.” I think we may safely take exception to these conclusions, as they are not borne out by everyday experience.

Complete ankylosis may exist without pain, and yet the patient is lame ; but it will be found that such ankylosis exists in some joint of extensive motion, and prevents flexion and extension in the whole limb.

Pain, then, may be generally said to be the common cause of lameness. The patient feels the pain either when it moves the limb, or when it bears weight or presses upon it. During motion the patient endeavors to avoid throwing pressure upon the lame limb, by treading lightly or stepping short, and by removing weight as far from the seat of pain as it possible can, not only by using the lame limb in a manner best calculated for this purpose—as by treading on the heels when the pain is in the anterior part of a limb or foot, and upon the toes when in the posterior part—but also by throwing the weight *from* the lame limb as much as it possibly can.

Weakness of the limbs may cause lameness and inability to perform the function of progression properly. A characteristic example of this has been described by Mr. George Armatage, under the title of "Congenital Muscular Atony," or a want of development of muscular fibre in the extensor muscles of the fore arm of foals. In this form of lameness the animal stands almost upon the front part of the fetlock joints; the flexor muscles healthy, fully developed. and having no antagonistic power opposed to them, in consequence of the arrested development of the extensors, draw up the limbs posteriorly; the heel of the foot and the fetlock pad being in close contact, the little animal being at the same time almost unable to move. I have found this kind of lameness occurring at any time during the first year of the animal's life, and it may not always be viewed as "congenital." Grazing on very bare pastures is apt to cause it, more especially if the foal be short in the neck, or when so formed that he has to bend over on his fore limbs considerably before he is able to obtain his bite of grass. Continuance in this position for a long time each day causes a weakening and arrestment of development of the extensor muscles, whilst at the same time the flex-

ors called into action are excited to increased development. We have thus, concomitantly, atrophy of the extensors and hypertrophy of the flexors.

Mr. Armatage recommends the continued application of mild blisters to the anterior region of the arm, to excite the exudation of plastic material and the development of the exudate into muscular fibre, and, by bringing more blood to the part, to increase its tone and power, and elevate its functional activity.

A horse may be lame from excess of tonicity in the muscles of a limb, accompanied by much pain, as in cramp, which renders him for the time being dead lame.

In other cases lameness may be due to disease in the blood-vessels of the limb or their parent trunks. For example, most extreme lameness is manifested in limbs when their "arteries of supply" become plugged by emboli (fibrinous plugs). A case of this kind occurred in my own practice, where a horse became dreadfully lame, and exhibited symptoms of great agony whenever put to work, while in the stable no signs of pain were present; but when he had worked in the carriage about 500 yards he would show signs of weakness in one hind limb, commence to sweat, and finally become immovable with pain. After a short period of repose, these symptoms would disappear, but appear again if any attempt was made to work him.

In addition to pain and lameness, the limb was deathly cold to the touch, and upon a *post-mortem* examination being made, the external iliac artery of that side was found nearly obliterated by a deposition of fibrine.

In the detection of the lame limb, the following rules may be laid down for the guidance of the young practitioner:—When the lame limb comes to the ground during progression the animal suddenly *elevates* that side of his body and *drops* the other side. If the lameness be in a fore limb the head as well as the fore part of the

trunk is *raised from* the lame and *dropped upon* the sound limb. This is called "nodding." If the lameness be in a hind limb, the quarter of the same side will be elevated and that of the sound side thrown forward and downward by a jerking motion; the head being moderately steady if the pain be not great, and jerked if there be acute agony. It is only by carefully noting these facts that we are able to detect the *limb* in which an animal may be lame.

The signs indicative of the seat of lameness are of two kinds:—(1.) Those manifested by action; and (2.) those discoverable by examination while the animal is in a state of rest. In some instances the latter alone are sufficient to indicate the seat and nature of the disease; but the lameness must be of a severe character, manifested by "pointing," standing with the lame limb flexed, or even completely elevated from the ground; or, as in laminitis, with the unaffected feet and limbs placed as much under the body as possible.

In the majority of cases, however, it is necessary to cause the patient to perform some movement; and it is agreed by all practical men that the slow trot is the best pace. A horse may walk lame, but if such be the case, he must be very lame. There are cases, however, as in "slight splint lameness," where it is necessary to urge the animal to a sharp trot before any deviation from the normal gait can be distinguished.

The following rules may be useful for the guidance of young practitioners:—The horse should be led out of the stable in a snaffle bridle, with the rein over the head. Let the man who leads him be ordered to hold the rein at about eighteen inches from the mouth, and let there be no holding up of the animal's head by a tight curb or rein, to prevent "nodding;" but, at the same time, the rein must not be too long, for if this be the case, a spirited animal may turn round so as to kick the man

with his hind foot. The horse should be trotted immediately after he is taken out; and for this reason, that any very slight lameness may disappear if he walked any distance. Many low dealers will knock a horse about in the stall to remove such lameness. This should be looked to in every suspicious case. If the horse be frisky, he must be cooled down and very carefully led, in order that the examiner may have a fair chance. It has been already stated that it is necessary to make the horse run both *from* and *to* the observer, and it may be necessary to do this repeatedly; but if an examiner cannot determine the existence in two or three minutes, it is better to put the horse up again, as the exercise has a tendency to decrease, or even remove the lameness. In some very slight cases it may be necessary to place a rider on the horse, as the weight upon the back will cause the manifestation of the lameness. As a rule, however, it is better not to do this, especially if the animal be a spirited one.

There are some lamenesses which are only manifested after sharp work, and in such cases it is necessary to give the horse half-an-hour's trot or gallop, tying him afterward in a stall until he becomes cool. When taken out of the stable and trotted after such a test, lameness, if any exists, will most assuredly be detectable. Some veterinary surgeons do this with every horse they examine; but it is quite needless in ordinary cases, and it is only when some suspicion exists that such a test is necessary, such as badly formed hocks, splints near the knee, or some alteration of structure in any part of the limb, or in cases where there is "pointing" while at rest, or where the disease is very slight.

The gait only is sometimes sufficient to determine the seat of lameness, and in some cases it is the only guide; but it is a good rule, and one that should never be neglected, to examine the lame limb while the animal is in a state of rest.

By the latter method we discover lameness by positive and negative signs. For example, if there be heat, pain, or swelling in any part of the limb, discoverable by manipulation, the evidence is *positive* that the cause is in such a part; but if, on the other hand, there be neither pain, heat, nor swelling in the limb, nothing in the superficial parts of the foot to account for it, we must conclude that it is deep seated in the foot, or a part thickly clothed by healthy tissues, and we must arrive at a conclusion by negative evidence, assisted by peculiarities of gate.

Lameness may be caused by a strain of a ligament, muscular tissue, tendon, by fractures, diseased bones, cartilage, or fibro-cartilage, morbid conditions of the skin; neuromatous and other tumors; plugging of arteries; accidents, as "pricks" in shoeing, "treads," wounds, ulcers, rheumatism, and reflex nervous action, as in diseased liver.

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Those having Ridgling Horses will please write me if they wish them castrated successfully.

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